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CANADIAN

MOTOR, TRACTOR AND IMPLEMENT TRADE JOURNAL

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VOL. III, No. 1 TORONTO, JANUARY, 1921 Subscription Price $2.00 Per Year

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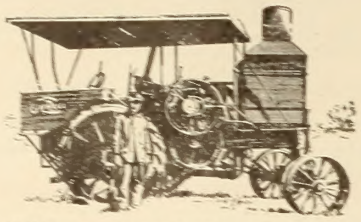
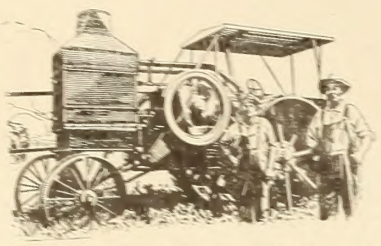
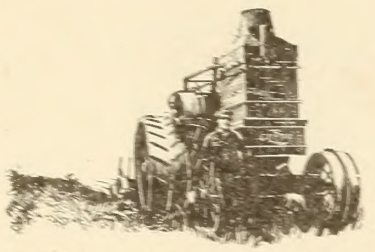


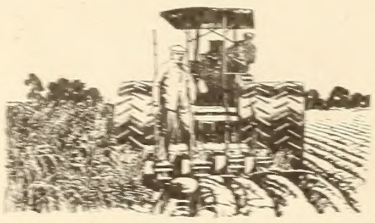
"Old Number One," the first OilPull, built in 1909, has worked ever since and isn't half through. Repairs cost less than 5c a day. Owned by Frank Schultz, Agar, S. Dak.



OilPull Number 174, built in 1909, 12 years ago. The owner, C. J. Chandler, Lincoln, Kan., says it will last another decade. The only renewed parts of motor are four piston rings.

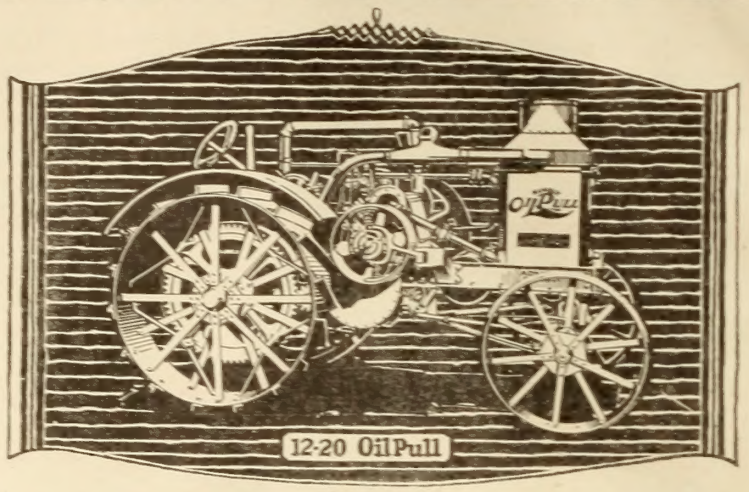


OilPull Number 314, owned by F. Gasperich, Onida, S. Dak. Built in 1909, it has cropped from 600 to 900 acres a year. Pulls eight bottoms in soil so tough that eight horses can't pull a single bottom.



"The Swamp Angel," so named by proud admirers in Northern Indiana for its ten years' work in the muck of the famed Kankakee. Has a record of marvelous performanbe and economy.

OilPull Number 437, bought in 1910, owned by James Moss, Blue Island, Ill. Is still "young" after 11 years of hard, faithful work on the farm, and moving buildings at odd times.



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THAT'S the one right way to sell a tractor—not on promises of what it may do, but on the record of what it actually has done over a long period of years in the hands of thousands of owners.

Rumely dealers make effective selling capital of the remarkable twelve year performance record of the OilPull Tractor.

The first OilPull tractor, built over twelve years ago, is still on the job. And hundreds of other old OilPulls—still going strong—prove that unusually long life is the rule with the OilPull, not the exception.

And the OilPull you sell today has the same basic features of design, greatly improved and refined through twelve years of field use and constant factory tests. That is why the OilPull is, as it always has been, cheapest in cost per year of service.

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Premier Meighen Discusses National Issues in MacLean's

The Rt. Hon. Arthur Meighen, Prime Minister of Canada, has written for January 1st MACLEAN'S a forceful exposition of his platform and policy.

HE discusses the bi-lingual issue, the tariff, reconstruction, the growing unrest and unemployment—but he avers that the tariff is the "one great issue of our domestic politics."

"Why is it the issue? queries Mr. Meighen. "It is the issue, I think, because the enemies of the Government cannot oppose us on any other."

Regarding the tariff, the Premier tells readers of MACLEAN'S: "We do not propose going any higher **on any single line of articles."**

"Is Mr. Crerar hedging?" the Premier inquires.

Of Mr. Mackenzie King he says: "He can be quoted on almost every conceivable side of the tariff issue."

Articles by Mr. W. L. Mackenzie King and Mr. T. A. Crerar will follow in succeeding issues.

"The Drama of Our Great Forests"

A BIG INSTALMENT IN JANUARY 1st MACLEAN'S

This stirring story by Arthur Heming is continued in January 1st MacLean's, chock full of wood-lore, fascinating yarns of the luring, frozen North, and amazing tales of actual adventure. The life history of the Canadian beaver, our national animal, is unfolded in a manner that surpasses fiction, as fact so often does if truly told by a masterful writer—"the beavers—those wonderful amphibious animals of the Northland that display more intelligence, perseverance, prudence and morality than many a highly civilized human being."

Other Big Features

"The Big Time Man."
By C. W. Stephens
A romantic story of the unromantic business of making bottles.

"Money and Motion Pictures"
By John W. McKay
A Canadian who filmed "The Miracle Man."

"The Diamond Pickers"
By Madge MacBeth.
The girl detective finds how diamonds disappear by extra-human agency.

"Foiling the 'Free Trader'"
By Kathrene and Robert Pinkerton.
A Hudson's Bay story, where the Indian outwits his white foe.

"The City of Peril"
By Arthur Stringer.
A big slice of this serial of Bolshevistic peril.

"When Toronto Grew Up"
By Col. Geo. H. Ham.
Anecdote after anecdote of the last fifty years in Toronto.

"Margot and Peter Flower."
By Mrs. "Margot" Asquith.
The commencement and course of an amazing eight years' flirtation.

Review of Reviews

Selections culled and clipped from the cream of the world's periodical literature.

"How France is Recovering"—Lovat Fraser.
"Germany Still Unrepentant"—J. Ellis Barker.
"Winston's Opinion"—Rt. Hon. Winston Churchill.
"Bethmann-Hollweg Explains"—A. J. Toynbee.
"Jailing the Journalists"—Freeman's Journal.
"Forced Into Slang"—George Ade

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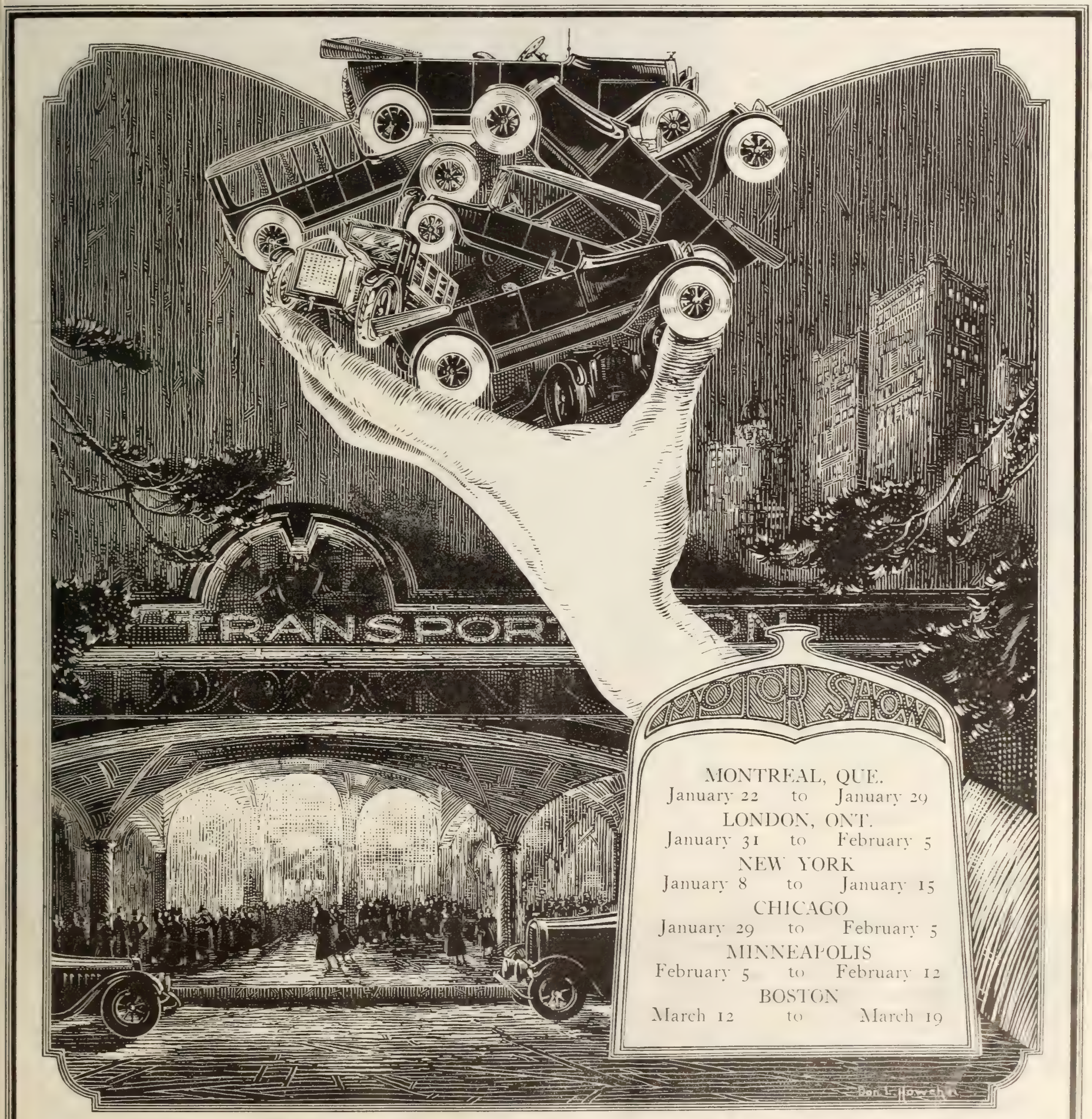
Volume 3 | TORONTO, JANUARY, 1921 | Number 1



MOTOR SHOWS, 1921

New Models Make Debut at Motor Show

At the Motor Shows to be Held in January Several New Models Will Make Their Appearance. These Show Some New and Striking Features

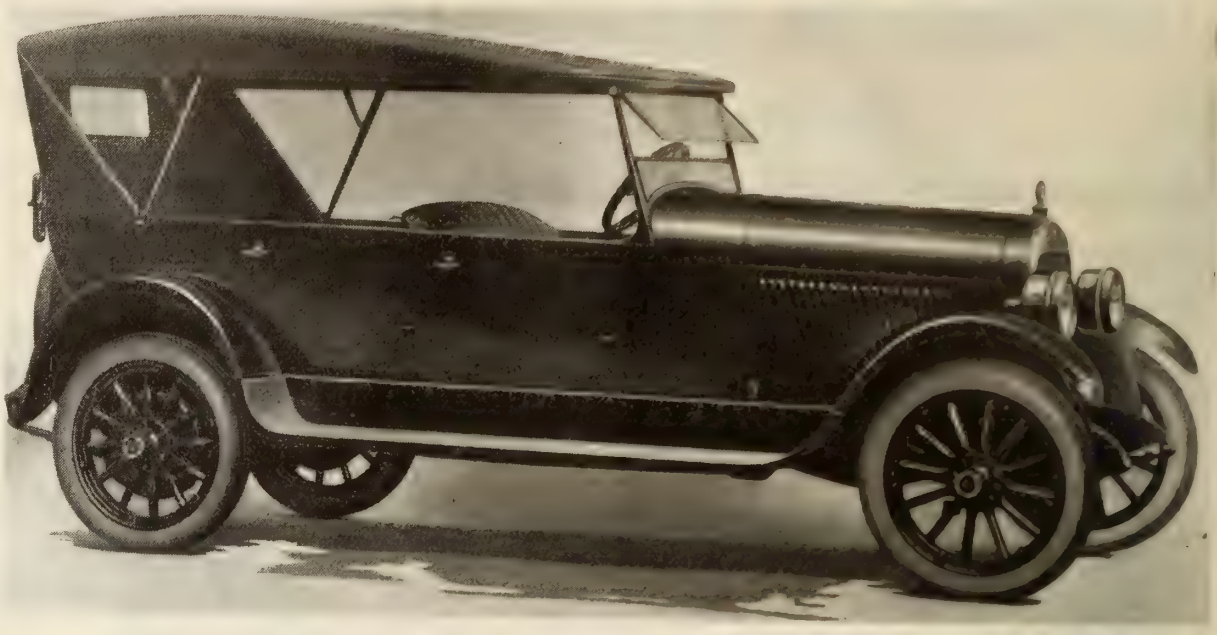
New Lexington Series "T" Models

THE Lexington Motor Company, of Connersville, Indiana, at the forthcoming motor shows will exhibit some new models known as the Series "T" line. There are three models in the Series "T" line: a seven-passenger touring car, seven-passenger Salon Sedan and a four-passenger Sedanette.

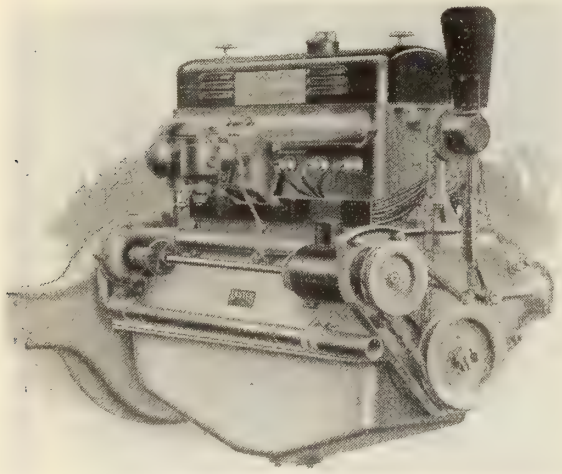
The Series "T" models are equipped with the new Ansted engine, which has just been announced. The motor is of the overhead valve type.

In the design of this engine, the makers say, 50 per cent. more power has been made possible than in the conventional engine of the same size. Large valve openings and overhead valves have always meant greater power, but it has meant, too, greater noise. In the new Ansted engine this larger valve opening and overhead valves have been made possible without the usual noise. This has been accomplished by means of a newly designed rocker arm and specially designed cam.

Another new feature of the Series "T" models is a larger body, seating five passengers ordinarily, but provided with two unusually comfortable auxiliary seats, which disappear completely in the back of the front seat when not in use.



Series "T" Lexington Seven-Passenger Touring Car which will be seen at the January Motor Shows



Engine of the Lexington Series "T" Models

The wheelbase is 128 inches, and three body types are mounted on this new chassis. Another new feature is a multiple disc clutch, which does not require adjustment for wear. This clutch, exclusively designed for Lexington, is carried inside of the flywheel and protected by the flywheel housing connecting the engine and the change speed gear box. The clutch differs from most clutches of this type because the moulded asbestos friction rings are not riveted to either the driving or driven plates, but float between them when the clutch is disengaged. Therefore, the makers say, both sides of the plates present a wearing surface instead of one and the life of the clutch should be almost doubled thereby.

The bodies of the Series "T" models are pleasingly distinctive. Because of the strength of the frame it has not been necessary to use a heavy body sill. The doors, therefore, have been carried to the bottom edge of the body, giving the appearance of unusual length and lowness. The doors have square edges, which harmonize with the general lines of the car.

Doors have outside handles, so that they can be conveniently opened when the side curtains are on. Latches are of the Sears-Cross anti-rattling type. The doors are not fastened to the open edge of the body, but at the bottom along the sill. The makers claim, as the door is not attached to the open edge there is no opportunity for annoying rattles.

The two auxiliary seats in the tonneau fold up out of sight when not in use. When erected they provide a comfortable seat with plenty of knee room because of the compartments in the back of the front seat, into which they are folded when not in use. Between these compartments is another for a thermos bottle; pockets, too, are provided in all four doors, that in the left front door being fitted with lock and key, as it contains the tool kit. There is also a compartment under the front seat for the storage of the top curtains.

A triangular plate set in the center of the instrument board panel carries all of the gauges and instruments, where they can easily be read by the driver and are perfectly illuminated at night.

The windshield is slanted backwards. The lower half of the shield is permanently fixed as it is not needed for ventilation. A cowl ventilator that is non-rattling and quick-acting takes care of that.

Exclusive Lexington improvements such as the one-finger emergency brake, the Moore Multiple Exhaust System, and the Lexigasifier, the 2-Way headlamps, which are vacuum-controlled in their operation, a vacuum-controlled oiling system, and thermostatically controlled cooling system are standard equipment of the new car.

Specifications of Series "T" Lexington Touring Car

Engine—6-cyl. cast en bloc, 3 point suspension.

Cylinders—Overhead valve type, 3¼ inch bore, and 4½ inch stroke; 224 cubic inch displacement.

Horsepower—S.A.E. rating, 25.4; brake horsepower, 70 at 3,000 r.p.m.

Crankshaft—Drop forged, high carbon steel, large diameter with three grooveless bearings.

Connecting rods—Spade type, bushing cast directly in big end.

Valve details—Mushroom, tulip shaped head type; double racing type springs used.

Rocker arms—Variable ratio, or "rocking chair" type, adjustable while the engine is running.

Electrical equipment—Gray and Davis generator and starting motor.

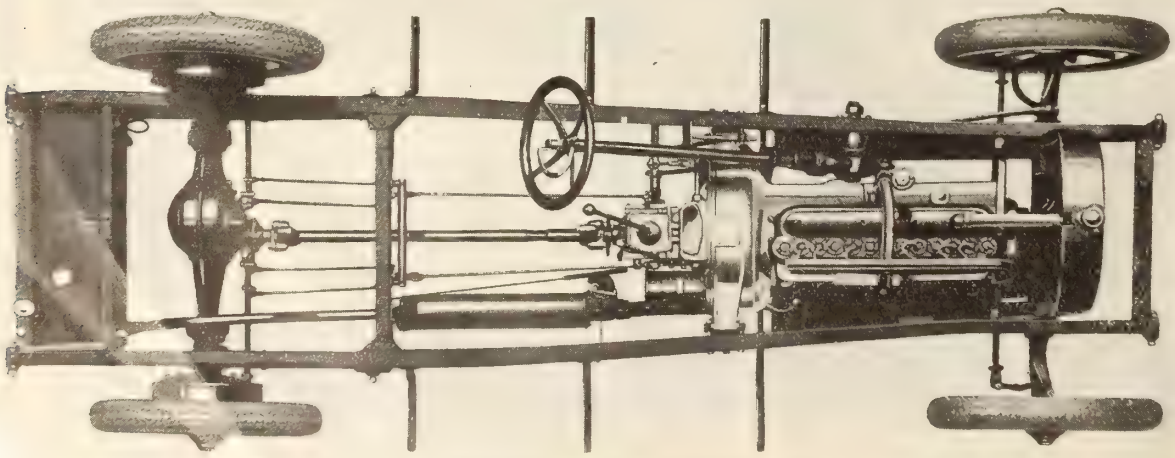
Ignition system—Connecticut.

Carburetion—Rayfield carburetor fed from Stewart vacuum tank.

Cooling system—Tubular type radiator, two-bladed "flood-oiling" fan; thermostatically controlled circulation, and impeller type water circulating pump.

Lubrication—Vacuum controlled full pressure feed, proportioned according to load.

Equipment—Stewart speedometer; Clark ammeter; 2-Way headlights; power driven air pump and Willard storage battery. Tires 32 x 4½ cord mounted on wood wheels with disc or wire wheels as optional extra equipment.



Chassis of the New Haynes Fifty

Haynes Fifty Makes Debut at Show

THE lighter and smaller Haynes car, which will be seen for the first time at the automobile shows in January, has been christened the Haynes Fifty. The new car, which is manufactured by the Haynes Automobile Co., of Kokomo, Indiana, although modeled on lines similar to the larger Haynes car, has a 121-inch wheelbase and is built in only one body style, namely, a five passenger touring car. The power plant of this car is the Haynes light six motor.

The body is made of steel and is built over a rigid, wooden body frame. The battery and tool compart

ments are under the front seat. There is an additional space under the rear seat. A heavy pressed steel covering is over the gasoline tank at rear of frame. The windshield is of the two-piece sloping type. A long hood and deep cowl, together with the high radiator and low, long body lines, give the Haynes Fifty a pleasing and attractive appearance.

The upholstery and body trim are of genuine leather. The seat cushions and backs are French plaited over extra quality curled hair and Marshall patented coil springs. The weight of each passenger is evenly distributed over the cushion. All cushions and backs are shaped to conform with the curves of the human body.

A one-man top of attractive water-proof material is standard equipment. The rear curtain is carried around the sides of the body to the rear top bow. A bevel plate glass window with a nickel-plated frame adorns the rear quarter of the top. The curtains are close fitting, and open with the doors.

Ventilators are built into the cowl on both sides near the floor line. When closed they are storm proof and are flush with the surface of the body.

The chassis frame is unusually sturdy, it is claimed, consisting of six-inch channel section side rails of pressed carbon steel with five cross members to insure rigidity and prevent side sway. Semi-elliptical front and rear springs are used. The front springs are 34 inches long and the rear springs 54 inches. The front axle is an I-beam forging. The steering knuckles and spindles are heat treated. The rear axle is the three-quarter type, with pressed steel housing and two annular ball bearings in each wheel.

The brakes are of double internal construction, having a 2-inch face and 16-inch expanding drums. The steering gear is the irreversible type, with nickel-plated column. Wooden artillery type wheels with demountable rims are used. The generator field is protected by a fuse and the balance of the electrical system is protected by an overload circuit breaker, mounted on the instrument board, making the system, it is claimed, absolutely safe.

Left-hand drive is used and the gear-shift and emergency brake levers are in the central position. The pedals are adjustable for different drivers. The brake pedal or emergency brake lever applies to both sets of brakes, affording ease of operation.

The instrument board is of enameled steel and carries the carburetor control button, combination lighting and ignition switch, overload circuit breaker, speedometer, ammeter, oil pressure gauge and instrument light.

A new feature of the Haynes Fifty is the electric starter which is controlled by a magnetic switch, operated by a finger button. It is the separate unit type with Bendix drive to fly wheel. The generator is mounted at the front engine and driven by helical gears. The ignition is the battery system with break-distributor unit mounted on the generator.

A large centrifugal pump, which forces water around the cylinders and valve seats, and a 15-inch multi-blade fan and tubular radiator provide the cooling system.

The specifications of the Haynes Fifty motor are as follows:

Type: Special design and manufacture; unit power plant, three-point suspension.

Horsepower: 29.4 horsepower, S. A. E. rating; 50 horsepower actually developed.

Cylinders: L-head type, 3½-inch bore, 5-inch stroke.

Pistons: Light-weight cast iron, equipped with three rings above piston pin.

Crankshaft: Three bearings. Statically and dynamically balanced.

Valves: Located on right side of cylinder block. Easily accessible, enclosed in dust-proof, oil-tight housing.

Camshaft: One-piece forging, heat treated and ground. Driven by helical gears.

Crankcase: Upper half, cast aluminum; lower half, pressed steel.

Bearings: Die cast babbitt on bronze backs.

Gasoline System: Gasoline tank is located at rear of car and is protected by rear cross member and heavy steel covering. Capacity is 16 gallons. Vacuum tank is in engine compartment.

Carburetor: Rayfield; attached directly to cylinder block, eliminating manifold, and affording better carburetion and mileage.

Lubrication: Circulating splash system, in connection with piston oil pump; capacity, 1.2 quarts per minute at 1,000 r.p.m. Oil level gauge on crankcase and oil pressure gauge on instrument board. Oil reservoir capacity is 7 quarts.

Oldsmobile Four-Cylinder Model

A NEW four-cylinder model has been added to the Oldsmobile line of passenger cars, and with the existing six or eight-cylinder models the purchaser is offered the option of every combination of cylinder numbers except a twelve.

The new model is to be known as 43-A and will be on exhibition at the January motor shows. The last four-cylinder Oldsmobile was made in 1917 and was known as the Model 43. While retaining some of the characteristics of the former model, the new car is different in many respects, especially as regards dimensions and the design of the parts which reflect the trend of engineering progress during the intervening years.

The engine is of the overhead-valve type with the four cylinders cast in block, the bore being 3 11-16 in. and the stroke 5¼ in. This gives an S. A. E. rating of 21.7 h.p., and on the block, it is stated, that the engine developed 43.8 h.p. at 2004 r.p.m. The crankshaft is of the three bearing type. The rod bearings are babbitt lined bronze. The design of the cylinder heads is interesting in that there are three large exhaust ports designed to more thoroughly scavenge the cylinder. The valve mechanism on top of the heads is covered with a black enameled cover. This is easily removable to permit of adjustment of the valve tappets.

The pistons are of aluminum and special attention has been given to the problem of expansion and distortion under heat so that the piston will assume a perfectly round shape closely fitting the cylinder walls under working conditions.

Cooling is by water circulated by a centrifugal pump, which is built into the front end of the cylinder block. Mounted on the forward end of the pump-shaft is a four-bladed fan. The pump-shaft is driven directly from the crank-shaft by a wedge-shaped belt, the pump running at twice crankshaft speed.

The gasoline is carried in a 14-gal. tank, supported at the rear end of the chassis, and the fuel is fed to the carbureter by a vacuum system. A device known as a re-atomizer is employed, and there is also an exhaust heated hot spot at the T of the intake manifold.

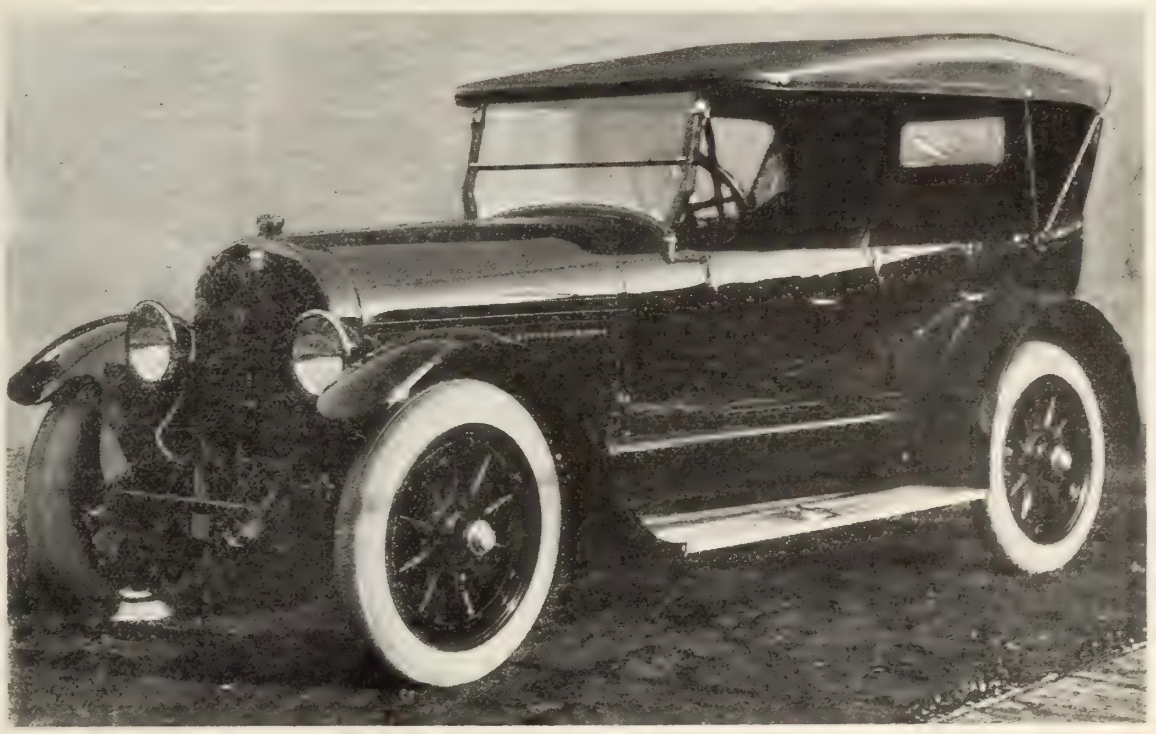
The clutch is a dry plate multiple disk member. This is one of the constructions that has been changed since the last four which had a cone clutch. The rear axle is of the semi-floating type, and the torque tube carries the entire tortional load of the axle. The axle pinion shaft is carried on New Departure bearings and the differential assembly is supported on Hyatts. The brakes are of the conventional contracting and expanding type, operating on the rear wheel brake drums.

The steering gear, of the worm and split nut type, is the same as has been used for several years in Oldsmobile practice. The gear is surmounted by a nickel finished column which is rigidly braced to the instrument board.

The appearance of the car has had special attention. The construction has been worked out so that the body hangs low, yet without decreasing the road clearance, and the seats have been placed correspondingly low, allowing for the low top. The fenders are crowned and the coupe body gives generous leg room owing to the increased wheelbase.

Specifications of the Oldsmobile Model 43-A

Wheelbase—115 in.
Engine—4 cylinders 3 11-16 x 5¼ in.
Radiator—Honeycomb.
Starting and Lighting—AutoLite.
Ignition—Remy.
Battery—Willard.
Gearset—Three speed selective.
Clutch—Dry plate.
Rear Axle—Semi-floating.
Springs—Semi-elliptic.
Tires—32 x 4 in. straight side.



Five-Passenger Haynes Fifty which will make its debut at the January Motor Shows

For This and Every New Year

RESOLVED

—that I will not participate in pessimistic gossip regarding business conditions.

—that I will keep silent rather than add momentum to unfounded rumors of discouragement.

—that I will consider the problem of readjustment as a personal problem.

—that I will do the job in hand with energy and enthusiasm.

—that I will think more of the day's work than the day's pay.

—that even under the most trying conditions I will not allow myself to lose sight of the fact that our country is the greatest country in the whole world—that our industry will always survive!

C. M. EASON,
Vice-President Hyatt Roller Bearing Company.

Prospects for Automobile Industry in 1921

The Automobile Industry is on a Sound Basis and the Prospects for 1921 Are as Good as Ever. Read What These Manufacturers and Distributors Have to Say About the Situation

CONDITIONS throughout the automobile industry to-day are very different from those of a year ago. In January, 1920, the demand for motor cars of every description was amazing. Production was totally inadequate. Even during the winter months automobiles were driven from the factory to distributors, because freight cars for shipping were at a premium.

With the slackening of demand in July, however, and the resultant cancellation of orders conditions changed until now many motor car manufacturers have large stocks on their hands. In order to reduce their inventories and place themselves in a better financial light with their bankers, the majority of these manufacturers have reduced prices and taken their losses on their inventories.

Raw Materials

Raw materials are easier to obtain—and somewhat lower in price. As production has been curtailed in these lines as well, however, a shortage may occur when the motor industry revives.

Because of this curtailed production—estimated at almost 60 per cent.—there is ample labor once more. Men are anxious to obtain positions—willing to do better work in order to retain them. This condition will prove beneficial to the industry as a whole, enabling manufacturers to weed out inefficient, indifferent labor and replace it with capable, reliable men.

At the present time, of course, curtailed production—coupled with the usual motor car manufacturing inactivity during the winter months—has materially reduced all staffs. There are strong indications, however, that with the coming of spring the motor car industry will revive once more and labor again be in demand.

The prospects for 1921, so far as we are concerned, are excellent. All our sales connections report excellent prospects. Whether this condition is true of the automobile industry in general, however, we cannot say.

Deflation Nearly Completed

We believe that price movements have practically reached their bottom, because most manufacturers have adopted the policy of taking their losses on their inventories. If the present indications for a boom in the spring materialize, further price concessions will be checked. There may be a slightly sagging market this summer, but after that we can look for a long, steady climb.

The process of deflation in the finished article, so far as we can see, is nearly completed. Raw materials have yet to come in for their share of the reduction, because—as we have stated above—manufacturers have taken their losses on their inventories instead of from raw materials, where such losses properly belong. Any further reductions will be spread over a long period. We believe that anyone who makes a study of conditions in Canada cannot fail to be optimistic regarding the future. Fundamentally, Canada is an agricultural country. And last season's crop was perhaps the largest in six years. There is, therefore, a great deal of potential wealth in the country—even though all our grain has not yet been exported.

Boom Follows Depression Period

History shows that periodically the commercial life of a country slackens. We have periods of depression and periods of activity. Indications are that this is one of the regular periods of depression—when every manufacturer curtails his output and cuts down his staff. But we must also remember that such periods have always been followed by booms, when depleted stocks must be replenished—a steady demand revives—and there is a tendency for everything to go up again.

Finally, we must not forget that only a short time ago we were living in a period of prosperity—and that days of famine and starvation have never yet touched our land. Canada has gained much beneficial publicity because of her magnificent part in the war—a fact which will bring the immigration needed to further develop her agriculture and natural resources. We view the future with the utmost optimism.

By WM. M. GRAY,
Vice-President Gray-Dort Motors, Ltd., Chatham, Ont.

Good Business in 1921 for Dealers

By H. T. PIZZEY, Sec. Auto & Implement Section, Sask. R.M.A.

JUST now a certain pessimism prevails among automobile retail dealers that conditions surrounding the sale of automotive machinery during the new year are anything but good.

How in the name of all that's good do they expect the buying public to look with optimism on conditions when they give vent to expressions of opinion as they do; well, even they can't tell us.

The merchants in most cases, at least through this Western country of ours, are the medium through which towns and villages are developed and assume a business-like aspect, and they are looked up to as the men of affairs and are logically the only persons in a position to educate the public to facts and figures. Remember, I said "facts," not rumors.

Certainly the public has been on a buying strike, accelerated to some extent by the luxury taxes imposed by the Dominion Government, but these have now gone and the prices of automobiles will show a drop to the amount of the tax which has been abolished. But certainly there is absolutely nothing to justify them conceiving the opinion that automotive prices must lower to any considerable extent, for the manufacturers are bubbling over with enthusiasm over present conditions; they have more orders than they can possibly fill for a long time to come and have just passed through one of the most successful years in the history of the automobile industry. All European cars have advanced in price and nearly all the higher grade cars sold on this continent are selling at advanced figures. Why the pessimism?

There is no reason why this year should not be a bumper one for automotive dealers, but very different "selling talk" must be used than the talk of selling out or going out of business. No longer does the prospective buyer come to the dealer and say, "I want a car," as he did in the days gone by, before automotive traction came into its own, when possibly only two makes of cars were handled in his home town. The dealer must get out and sell, and if he will attempt that he will not be disappointed. Automobiles are not a luxury, as some people who hold old-fashioned ideas would have us think. They are an every-day necessity to the man who has his eye to the future and the buying public cannot abstain from normal buying without injury to their own interests.

The implement and automobile dealers of Saskatchewan organized as a trade section of the R.M.A. exhort their brothers-in-arms throughout the Dominion to ORGANIZE. Remember, very rarely has an individual been able to secure any reform beneficial to the trade as a whole, although that individual may have been able to secure certain concessions for himself. There are men of this calibre in your district, and it's a safe bet that they are members of a trade association. Then why not join an association and put it to work for you?

Start the new year well by supporting the automotive organization of your province. If there isn't one, start one yourself. Then get out with a smile on your face and dig for business. It's there, it's only hibernating and the enterprising dealer who works will find it.

Don't Lay Down on the Job

By W. L. MONCUR, of Cutten & Foster

SOME business men have acquired the idea that prosperity has come to an end and that it is not worth while making any effort to buy or sell. They have instructed their buyers to place no orders whatsoever and have permitted their merchandise stocks to run so low that in many cases they are unable to fill their orders. In other cases, instead of buying reasonable quantities they have been sending in orders for one item to be shipped direct to their customers.

This more than penurious policy is bound to work a hardship on the business of the country because the man who starts out on a policy of this kind will find it will react on him sooner than he expected. One industry is dependent on the other—and one class of workers is dependent on other workers for their livelihood. When the jobber stops buying the manufacturer must lay off his help. As soon as help is laid off they can no longer buy from the storekeeper, and the storekeeper cannot buy from the jobber—the result is a stagnation of business, which need not exist if everyone will put his shoulder to the wheel. **Prosperity is a matter of psychology—nothing more or less than confidence. Destroy confidence and you have destroyed prosperity.**

During the great world war this country raised large amounts in war loans. These enormous sums were paid into the treasury of our Government with comparative ease, and after the last loan was finished it still left enough liquid capital to enable business men and manufacturers to expand and reach out very extensively.

If Canada was big enough and able enough to raise such an enormous amount of money, shall it be said that we are not able to work together and restore normal business conditions, which shall offer to everyone who wants to work wages that will enable everyone to support himself and his family decently?

We have heard often the expression—**"The public refuse to buy."** Who is the public but you and I? It is up to the men of intelligence in this country to set the right example.

We possess everything necessary in our own land to continue in a prosperous condition. We have not only enough food products to provide food for every man, woman and child, but we have a large surplus out of which we have been feeding the rest of the world. Canada is, therefore, of all the nations of the world, in the most enviable position to-day.

There is just one way that we can bring about confidence and stability and that is by a vigorous campaign in which all must join.

If every business man would adopt the slogan, "Buy Now" and would advertise it in the same way that we adopted the slogan four years ago, "Buy Victory Bonds," it would soon put considerable merchandise, now on the dealers' shelves, into the hands of the consumer, merchandise on the jobber's shelves into the hands of the dealer, and would start the wheels of industry in the factories humming again.

Will Be Banner Year for Power Farming

Farm Machinery Manufacturers Discuss the Prospects for 1921. All Agreed Business Will be Good, But the Dealer Must Go After It

ON THIS page M. T. I. publishes the opinions of a number of manufacturers in power farming machinery on the prospects for 1921. These articles were written specially for M.T.I. and are intended to give the dealers in power farming machinery the outlook as viewed by the manufacturers. The articles are all couched in optimistic terms and should put new life into all who read them and hearten the dealers for the year just commenced.

* * *

Dealer Can Sell if He Thinks He Can

By D. R. POTTER, Beatty Bros.

YOU are to be commended in your efforts to cheer up the dealer. There is no reason why he should be gloomy, he could sell if he thought he could. Dealers are allowing their happiness to be overshadowed by the old bogey, "You cannot sell on a falling market." The dealer can sell if he will get out and try to sell. He will need, however, to alter the dimensions of his face, transforming it from long to wide and fill his mind with the idea that goods can be sold. If he will institute a careful canvass and will get the help of salesmen whose assistance is supplied by every large implement house, he will be able to do a good business. All our dealers this fall who have worked hard have done well. Those who have fallen down are those who have clung to their shops and filled up their time with blue ruin talk.

There never was or never will be a year in which there are not some obstacles to overcome, and this year the dealer finds that objections that almost stop the sales of goods in the last five or six years have been entirely removed. In our lines, for instance, the farmer oftentimes would hesitate about buying steel stalls because he said he could not get the help to put in his cement work and build his barn. All contractors were short of help and any kind of a contractor was hard to get. In previous years the farmers would not build because of the high price of lumber, but now the price of lumber is coming down. In previous years the farmers hesitated to buy equipment in which to tie up their stock because they said it did not pay to feed that stock in view of the scarcity and high prices of feed. This year there is abundance of feed in almost every province. And so we might go on. It is true that there are difficulties to be counted in selling at the present time, it is the psychological effect of all this talk about falling prices, but, on the other hand, as we have indicated, many of the obstacles of previous years have been removed and on the whole the dealer will find, if because he anxiously tries, that it is as good a year or better than any previous year.

The prospects for tractors during 1921 have never been better.

* * *

Will Be the Best Yet

By R. SINCLAIR, Sawyer-Massey Co.

THE banks have curtailed credits, apparently on account of unsettled trade conditions, but Canadian power farming machinery manufacturers by selling to responsible farmers on part cash part credit basis have made it possible for such farmers to purchase power farming machinery without bank accommodation.

Farmers expect prices of machinery to drop. What are the facts? Pig iron during the last four years increased over 225 per cent., steel prices more than doubled, malleables increased over 400 per cent. in price, and labor has more than doubled. Power farming machinery, however, increased only approximately 60 per cent. These are facts. How then can the prices of power farming machinery drop at present? The wish of the farmers that prices on machinery will drop considerably is father to the thought that they will drop.

All dealers should educate their patrons to these very important facts.

As far as the writer believes, 1921 will be "the best yet" as regards sales of power farming machinery because practically every farmer realizes that he cannot afford to be without a tractor and knows that, with a tractor, he can produce food stuffs cheaper and farm more efficiently.

* * *

Machinery Coming Into Its Own

By E. BARELMAN, Pres. Gilson Mfg. Co.

ANSWERING your request for our views on the farm machine situation for 1921 we have no hesitation in saying that the prospects are exceptionally good. The buying public all over the world are sobering up after their wild spending orgy. Everybody now is thinking of going to work seriously and earnestly. The days of easy money are over.

The exodus from the farms to the cities with its abundance of easy money is coming to an end. The cry is now "back to the land." Instead of buying phonographs, pianos, investments will now be made in farm lands, buildings and farm machinery, and most important of all, farm machinery—the implements of production.

To prove that this is not a case where the wish is father to the thought, we may say that our business for November was 33 1-3 per cent. greater than that of a year ago, while December will also show a substantial gain.

We are looking toward the future with the utmost optimism because we think the farm machine business will come into its own. It has been playing second fiddle to the more expensive luxury industries of jazz, entertainment and adornment. It has waited patiently for a more work-a-day spirit, and we believe this day is coming quickly.

* * *

Demand to Equal Past Five Years

By N. J. RUTLEDGE, J. I. Case T. M. Co.

THE readjustment period is with us. We have been expecting same for the past two years. Up to a short time ago we were spending our money freely, especially on non-essentials. Now, "without justification," the general public are over cautious in the other direction, and I say "with justification" because we are a great agricultural country and (right to-day a bushel of wheat will go further in the purchase of agricultural implements than it would before the war), in the best interests of any business, be it what it may, and even during business depression, our past experience has shown us that the good sane business man, sooner or later, purchases those things essential to the successful conduct of his business.

The farm market today is the most desirable in the world. Agricultural implements are an essential, therefore the demand does not fluctuate as in non-essentials. During 1921 in Canada I look for a demand equal to an average of the past five years.

* * *

Don't Weaken

By W. A. PRUGH
Gray Tractor Co. of Canada

IN choosing a motto for 1921 I would say—

"DON'T WEAKEN"

Nothing is ever accomplished by laying down when work looms up ahead of us. The period of readjustment through which we are passing should not affect our efforts to produce business. The farmer cannot afford to let his land lie idle next year just because he doesn't know what the price of grain is going to be next fall—neither should the dealer slacken in his efforts to sell, awaiting a more convenient time until conditions are settled.

Keep going—work harder than ever—"DON'T WEAKEN."

* * *

Future Never Looked Better

By J. E. ALDERSON, Alderson Bros., Motor Sales, Toronto

WE, AS distributors for Gray Dort motors, have been very much pleased with the business in the months of November and December, very little behind 1919. The future in the automobile business never looked better than it does for us in 1921, especially the outside dealers; they claim prospects never were better.

And now that the luxury tax has been taken off I think the sales will increase from fifteen to twenty per cent.

Our dealers on Toronto territory are taking in the months of December and January better than 30 per cent. of the cars taken in the whole season of 1919.

Are You Looking at the Doughnut or Hole?

The Optimistic Dealer Looks at the Doughnut and Not the Hole. The Prospects for Power-Farming in 1921 Are Good, But it is the Optimistic Dealer Who Pursues Sales Campaign Who Will Get the Business

By ARNOLD P. YERKES

SOMEONE once remarked:

"Between the optimist and the pessimist there's a difference which is droll;

"The optimist sees the doughnut, while the pessimist sees the hole."

It is just about as easy to take an optimistic as a pessimistic viewpoint or attitude on most subjects. We usually find what we are looking for.

Everyone has seen a great many proofs of this fact. Two business men in the same town, and therefore under the same conditions, will hold exactly opposite viewpoints on business conditions simply because one looks on the bright side and ignores the unpleasant points, while the other passes over the bright spots and views only the gloomy side of things.

Attitude Toward Business Important

Furthermore, the attitude which a person takes is almost sure to be reflected more or less by those with whom they come in contact. The optimist radiates optimism, while the pessimist throws a gloom over everyone with whom he does business or with whom he talks.

There are both optimistic and pessimistic power farming dealers to-day, and, as usual, it is just as easy to take one position as the other. The pessimistic dealer talks about the possibility of lower prices and claims that farmers are going to hold off buying until prices come down, or become more settled. He also points out that prices of farm products have fallen to low figures and that farmers' buying power has therefore been greatly reduced. Anyone in this frame of mind has no difficulty in finding plenty of arguments tending to show that business is in very bad shape and that there is little hope for improvement for a long time to come.

The optimistic dealer, however, doesn't place much weight on the points just mentioned. He calls attention to the fact that the 1920 crops, on the whole, were very good and a great many farmers sold their crops at fair prices, and they, therefore, have money with which to buy new equipment for 1921, and will be ready and willing to do so.

The optimistic dealer also sees reason for belief in good trade in power farming equipment in 1921, because most of the grain growers who had their crops threshed and on the market while prices were still high were those men who had tractors and threshers of their own with which they were able to get their threshing done on time without waiting for a hired rig. This was a good boost for power farming methods.

Most dealers know that last summer the demand for individual threshing outfits was much greater than the supply. Thousands more of these small threshing machines could have been sold if they could only have been manufactured and delivered in time. One of the branch houses of a large manufacturing concern reported last fall that up to the first week of the threshing season they had on file forty more orders for individual threshing outfits, including both tractors and threshers, than the manufacturer had allotted to them as their proportion of the factory's output. This in spite of the fact that they, knowing that they could not obtain enough machines to meet the demand, had refrained from soliciting orders and had booked only those which had been brought in by the customers themselves.

Among the thousands of farmers who have come to the realization that it is extremely desirable for a large grain grower to own his own tractor and threshing outfit, and who were unable to secure a rig last season, it is morally certain that there are a great many who will place their order in 1921, regardless of whether they hope for or expect a reduction in the price later on. And it is the optimistic dealer who looks upon the bright side of things and orders his machinery in time to insure delivery in ample season who is going to enjoy this business. Those who delay until the last minute, hoping to receive the benefit of some late reductions in price, will, in all probability, have the same experience as in the past, namely, that of seeing their customers go to competitors for goods which they have failed to put in stock.

About Prices

And, speaking of prices, it is very difficult to see how any substantial reduction in prices of farm machinery can possibly occur in 1921. The fact must not be overlooked that a great many of the machines for the 1921 trade have already been built, while the material for most others has already been delivered to the manufacturers and some work done on it. This means that these machines contain material bought at the highest prices which have prevailed for years. Then, too, they have been built by the highest priced labor we have ever known. Contrary to many other lines, the farm machinery industry has not had any substantial reductions in the prices of raw materials, and, as everyone knows, it is not possible for prices of the finished products to be decreased unless there have been corresponding reductions in the raw material or the labor required to produce the machines.

In the case of dry goods, in which considerable reductions in prices have occurred, the prices of the raw wool and cotton have had heavy declines. This means that the manufacturers in these lines can replace their present stock with materials bought at much lower prices. Furthermore, the margin of profit and the "turnover" in dry goods, as well as in many other lines, is much higher than in the implement business. This, of course, means that reductions can be made more easily in these lines than in the case of implements.

One doesn't have to be an optimist to realize that the farmers will plant their crops in 1921 the same as in other years. They may be far from satisfied with present conditions and prices, but there are very few who are sufficiently dissatisfied to give up the business entirely, and even if they should, it is more than likely that someone else would farm the land, provided it was good farming land. This means that machinery will be needed to prepare the seed bed and to do the planting. It also means that if the crop is worth harvesting, machinery will be needed to do the work. It may be that farmers will not buy so heavily in 1921 as they have in other seasons when conditions looked better to them, but there will certainly be enough business to make things interesting and profitable for the optimistic dealer who goes after it.

And, in going after it, it is up to him to point out to his prospects the possibilities of power machinery in reducing their expenses and increasing their profits. If prices for farm products are going to be low next fall that will be all the more reason why the farmer should use his best efforts to reduce his expenses and keep them at a minimum, and to keep his production at the highest possible point. Mechanical power in place of animal power makes both of these things possible.

Outlook as Bright as Dealer Makes It

It is altogether possible that the season of 1921 will find conditions very different from 1920 in that dealers will have to do more real selling than merely taking orders. In other words, instead of simply waiting for the farmers to come and order such machines as they have been able to secure, it will very likely be necessary for them to go out and sell the machines. While this, perhaps, will not be quite so satisfactory to those who like money to come in easily and without much effort on their part, it will not be objectionable to the live wires and the optimists who are not afraid to hustle.

Taken altogether, the outlook for 1921 is just as bright as the individual wants to make it. It is hoped that most power farming dealers will be optimistic, keeping their eyes firmly fixed on the doughnut and ignoring the hole. If they will do this, and go after the business in the manner of a real salesman and not simply an order taker, the results of the 1921 season will be entirely satisfactory.

When a granary burst during a recent rain storm in Floydada, Texas, tractors were used to move the grain. Each tractor was loaded with 200 bushels and the trip of 16 miles was made in a little over four hours, in spite of the fact that the roads for the most part were under water.

Have Confidence in Agriculture

By H. O. K. MEISTER

CALL a spade a spade—there is no use evading the issue. The long anticipated period of readjustment is upon us—and yet, the power farming machinery industry should have no hesitancy in facing it with unshaken confidence.

We are allied with the world's basic industry. Agriculture is, and always will be, the "Bell-Wether" of all human endeavor.

Even in periods of greatest business depression the American farmer has always come through and purchased those things necessary to the successful conduct of his business.

With the stabilizing influence of such organizations as the American Farm Bureau Federation, the farmers of to-day are in a better position to cope with their problems than ever before. Let us look to the farmer with renewed confidence. History will repeat itself with emphasis. Will we be prepared?

Much of the equipment that will be required to plant, cultivate and harvest the crops of 1921 has not yet been built!

There is no occasion for marking time. It behooves both manufacturers and dealers to prepare for the inevitable spring rush.

Let us study the 1921 farm market in the light of the past—if all of us will intelligently analyze our future requirements—if the dealer will investigate conditions in his territory and frankly discuss the outlook with his manufacturer—industry will move forward unhesitatingly and the problems of readjustment will surely fade away.

Let each do his share—let all have confidence in Agriculture!

Big Demand for Farm Trucks in 1921

The Truck Salesman Will Find a Ready Market for Motor Trucks Among Farmers During 1921. Dealers Should Read This Article for Helpful Data

By DONALD R. COWAN

The majority of the farmers of Canada are in need of trucks. The farmer won't come to you to buy—you must go to him. In your sales talk sell the idea of better and cheaper transportation. Talk increased production and economy. The farmer will buy if you show him that a truck will increase production and be a saving utility. When you convince him that he can earn more money and save more money by the use of a truck your battle is won.

Economy and the idea of better transportation has got to be sold to the farmer before any trucks can be sold to him. As M.T.I. has pointed out at different times, "Don't sell trucks, but sell transportation."

LAST fall many tons of apples, peaches and plums went to waste in the farm orchards throughout Ontario while the eyes of the city consumer fell wistfully upon fruit in the windows of the corner grocery store which he could not buy because of the prohibitive price. The farmer gave some of his fruit away to those fortunate city people who could motor to his farm and do their own fruit picking, and allowed the remainder to go to waste because he was unable to do otherwise. Why was the farmer so helpless? Simply because there was a lack of efficient transportation at rates low enough to enable him to make a profit while he supplied the consumer with fruit at prices which the latter was willing to pay. So the farmer lost money, but the city consumer did not benefit thereby.

Farmers Need Better Transportation

The answer to the whole problem is better transportation. The "short haul" on the railway was always a difficult problem, but rising costs during the war pushed local or "short haul" freight and express rates so high that a decrease in the volume of this kind of traffic took place. Part of it went into the hands of those motor truck operators who were ready to take it, but there was not enough of them for various reasons. Consequently, a good part of that traffic simply went out of existence. The farmer's fruit came under that category last fall.

Supposing the farmer had owned his own truck, what then? This not only applies to fruit, but to every other farm product. If the manufacturer can save 20 per cent. to 25 per cent. by using motor trucks, the farmer should be able to do better because he owns his own truck, has practically no overhead, no expensive truck drivers to pay off, and no dividends to earn for shareholders. He only needs show a profit for himself and he can usually do it.

A Good Selling Point

In the vicinity of Leamington, where wholesale quantities of vegetables are grown and sold in carlot shipments throughout Canada by the Erie Co-operative Company, probably one-half of the vegetable growers use light trucks, made-over pleasure cars, and, in some instances, a pleasure car with trailer attached. The general opinion in that district regarding the motor truck is indicated by the fact that it is the more prosperous vegetable growers that own trucks. These farmers believe that not only was the motor truck more economical than the horse vehicle for hauling large quantities of farm produce, but it effected a more important economy in allowing the producer more time for work on the farm. This is a good selling point.

Several onion growers in Essex County, Ontario, own a truck jointly for use chiefly in hauling fertilizer to the farms and onions to the shipping point. The round trip to shipping point is fifteen miles, and the one-ton truck will make six trips in eight hours. During that time it will load a freight car of 30,000 lbs. capacity. Formerly it required three teams, making two trips each, to load the same amount of onions in ten or eleven hours. It was estimated that after all expenses (including depreciation), were paid, the farmers saved $15 per carload by using the truck instead of teams. It is also an important advantage to the producer that a carload of onions could be placed on a distant market fully two hours earlier owing to the economy of time in loading. These examples simply illustrate the importance of motor trucks to vegetable growers under favorable conditions.

Hauling Livestock

The motor truck salesman will find a market for trucks among the farmers within hauling distance of meat packing plants. In 1918 a beginning was made in hauling hogs by truck to the Toronto livestock market and the abattoirs. The practice has grown so rapidly that now fully three-fourths of the hogs and an increasing number of calves and sheep raised within a radius of thirty miles from Toronto are marketed by that method. The salesman on the verge of exploiting this field will find the following data obtained from a study of the situation and the opinions of the farmers, packers, and men engaged in hauling livestock by truck to be very helpful:

(1) The truck rates per 100 lbs. of livestock range from 30c to 60c, according to the size of the load, the length of the haul and the condition of the roads.

(2) The farmer obtains the correct weight of his livestock and has no cause for quarrel with a driver on that score.

(3) The farmer obtains the exact selling price of his stock, less cost of motor transportation.

(4) The drover's fees varying from 50c to $1.50 per 100 lbs. are eliminated.

(5) The shrinkage by truck is about half the shrinkage by train, owing to the shorter time in transit, the better usage and the proper feeding and watering of livestock.

(6) The farmer may market his livestock by truck when prices are high, instead of waiting until a carload is made up from the livestock in his neighborhood.

(7) The abattoirs prefer a hog shipped by truck because there is less bruising in transit.

Think of the possibilities in Canada when one reflects that 6,800 hogs are hauled into Indianapolis stock yards in one day, by 500 motor trucks, valued at $200,000!

A bulletin issued not long ago by the United States Department of Agriculture pointed out the fact that motor truck hauls in 1918 from farms to shipping points averaged 11.3 miles, while horse and wagon hauls averaged 9 miles. The motor truck made 3.4 round trips over the longer route, while horses made 1.2 round trips over the shorter. It was also estimated that the cost of hauling in wagons from farms to shipping points averaged about 30c per ton-mile for wheat, 33c for corn, and 48c for cotton. The averages of the motor truck fall far below these figures and are 15c per ton for wheat and 18c per ton-mile for cotton. This is evidence enough that the motor truck is needed on the farm.

Truck Reduces Production Costs

Not long ago a well-known tire company made a study of the market for motor trucks among farmers. After citing figures showing the tremendous growth of the urban and food-consuming population as compared with the agricultural and food-producing population, and holding up the motor truck as one of the important factors in solving the acute farm labor shortage, the company's report advised that farm prospects be approached with the argument that the truck would supplement rather than supplant the horse. "The farmer loves his horse, and you will find sales resistance if you try to get him to do away with it in favor of motor power; but if you tell him that the truck will save his horse drudgery, you appeal to a sentiment which has been handed down for generations."

In spite of this statement a chance of greater profit will induce a farmer to change his methods just as quickly as a manufacturer. The farmers of Canada are bearing the brunt of a tremendous decline in the value of their produce, and they are face to face with the problem of making a corresponding reduction in their cost of production. Economy, therefore, is the best selling argument to-day. It is the salesman's task to show the farmer that he can reduce his cost of production and marketing by the economical use of a good motor truck.

The farmer is demanding to-day better and cheaper transportation. The motor truck is the answer.

National Tractor Show

THE sixth annual national tractor show, which will be held in Columbus, Ohio, February 7 to 12, 1921, will be a center of dealer interest, as is evidenced by the activity recently shown by dealer organizations. Two American implement dealers' associations, which have held annual conventions recently, those of Ohio and Indiana, adopted resolutions strongly indorsing the show and appointing committees to work in the interests of dealer attendance at the show. Space has been reserved by these dealers' organizations, which will be used as headquarters for all their members in attendance at the show. Efforts are being made to interest other dealer associations and it is not unlikely that additional headquarters will be maintained at the show.

The show management is continuing its efforts to influence farmer attendance. A number of meetings have been arranged for the Coliseum at the tractor show grounds, which will be addressed by prominent agricultural authorities from all sections of the country. These meetings are expected to have much influence in spreading the idea of farimng with power.

Additional reservations for exhibit space continue to be received at the show headquarters in the Deshler Hotel, Columbus.

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Motor Shows

JANUARY, apparently, is the month par excellence for motor shows, both in Canada and the United States. Two important shows take place in Canada this month, Montreal, January 22-29, and London, Ontario, January 31—February 5.

All Eastern Canada dealers should make a point to attend these shows, where the newest models and the latest in accessories and equipment will be on exhibition. Fuller particulars regarding the shows and exhibits will be found on another page of this issue.

The industry is looking forward to the shows as the next big selling stimulant, and is right in doing so. The beginning of a new year seems propitious for big automotive demonstrations. The dealer can take his cue from that fact and stage a show in his own salesroom. If the industry as a whole expects to derive benefit from a show it is only reasonable to suppose the dealer can reap some benefit for his own personal effort in his own community.

Luxury Tax Removed

AUTOMOBILE dealers all over the country were elated when the Government intimated that the luxury tax on automobiles had been removed.

The luxury tax had an important bearing on the automobile industry and in no small measure added to the causes which stopped the public from buying. The removal of the tax could scarcely have come at a better time. The industry can start the new year with a much lightened burden.

However, there is a fly in the ointment. It will be recalled in the original tax resolution that a luxury tax of 15 per cent. on automobiles valued under $3,000 and a tax of 20 per cent. on automobiles valued over $3,000 was to be collected by the manufacturer. Many dealers were caught with large stocks on hand on which the tax had been collected when the tax was suddenly removed. Unless the Government refunds the tax collected from the manufacturers the dealer can get no rebate from the manufacturers. The Retail Merchants' Association has taken the matter up on behalf of the dealers, as it is held many of the dealers stand to lose thousands of dollars, and it is said some may be forced out of business.

When the tax was first imposed the automobile dealers had to pay taxes on cars they had in stock and which were purchased prior to the imposition of the tax. It is only fair and reasonable that they should get some consideration now and no doubt a satisfactory adjustment will be made.

The Past Year

THE year just gone was rather a bewildering one for the automotive industry. At the beginning of 1920 the demand for automobiles was amazing. Production was inadequate and the situation was considerably aggravated by a shortage of freight cars and several railway strikes.

The slackening of the demand did not come until July. In July there was considerable cancellation of orders and business started to go back. When the slash in prices came in September the industry received a staggering blow, the effect of which is still being felt. Towards the close of the year, however, there was a noticeable change for the better. There are strong indications that with the coming of spring the motor car industry will revive and show large sales.

Tractor Demonstrations

THE DECISION of the tractor manufacturers to revive tractor demonstrations is a recognition of the fact that the industry still needs a degree of exploitation, says the Chilton Tractor. The lack of demonstrations for a year has emphasized their necessity. It has shown beyond all doubt that the proper kind of demonstration can be made a great stimulus for the tractor business.

The industry appreciates that demonstrations from now on must carry the message of power farming to as many people and as many sections of the country as possible. Their purpose must be to sell the public on the merits of farming with power. They must consist of more than a mere tractor plowing pageant. They must show tractor farming in all its possibilities.

Pleasing Your Customers

UNDOUBTEDLY one of the most important problems the dealer has to solve is to keep his customers pleased and thus pave the way for the return visit, says H. S. Bassett in Tire Trade Journal. Keeping old customers is fully as important as making new ones. To induce customers to buy the first tire or tube is a problem, but to have them replace many times is an art worthy of most serious consideration you can give in the sale of tires.

With the aid of several allies you may do the trick. First we have our friend "Courtesy," closely followed by the near kin "Service." As it is a well established fact, no dealer can thrive or prosper without both in good working order, we pass along to your next worthy ally, "Value."

Value in the tire business may mean much or little. Value does not consist in selling tires below market price, but should be something which makes customers say, "Yes, I always use Blank's tires."

Now, we come to another familiar phrase, "Dependability." A tire dealer to be rated dependable need not do more than be honest and painstaking in all dealings.

To make adjustments properly and well, to make every person who comes in with a kick go out with a smile, is worthy of the best efforts from you and your assistants. No dealer ever failed by being fair in the matter of adjustments. Though many times the customer seems unfair, in the long run the customer is ninety-nine per cent. right.

And now we reach "Policy." A good policy is more to be desired than a fat bank account. The bank account may shrink, but once a suitable policy is established it remains a tangible asset forever.

To get people working with you and not for you is the aim of all good dealers, and this can only be attained by a spirit of brotherly love. Give your helpers word of encouragement, extend the glad hand and rule by softly spoken words rather than by a rod of iron.

Last, but not least, we have "Confidence." You may as well try to run an automobile with gasoline as a tire business without confidence. Once the buying public loses confidence in your goods, you might as well quit, for it is next to impossible to sell tires unless you gain and keep the confidence of the riding folks.

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Getting Back to Pre-War Conditions

A CAREFUL analysis of the conditions pertaining to motor vehicles for the early months of 1921 are highly promising in every respect. Our company is booking many orders for January, February and March delivery and a feeling seems to prevail among our distributors that the new year will not only bring forth heavily increased sales, due to the fact that many buyers have held off, awaiting more settled conditions, but also the new roads which are being developed will open up many new avenues to sales heretofore unprocurable. For instance, actual figures show an increase in rural users of motor trucks in 1920 of 27 per cent. over 1919.

There are very few of us who have not felt the depressed condition of the past few months, but when viewed from the proper light does it not seem that we are settling back to pre-war conditions much easier and much more rapidly than was contemplated before the war came to an end?

There is nothing that Canada can do for herself in this particular period more than to purchase goods made within her own boundaries. This does not apply to motor vehicles any more than it does to any other commodity. Let us start 1921 in right and before purchasing any article let us give the Canadian manufacturer the first chance, and, if possible, the preference.

H. R. WILLIAMS,
Beaver Motor Truck Corp.

Banner Year in Accessory Business

AFTER having made a complete survey of the motor car industry I find that although the slump has not passed by a single one, yet there is the optimism of a good year for 1921—based on the following facts:

Factories had been buying in large quantities of certain portions of their raw material because they could obtain it and the balance was left out, so that a very unbalanced inventory was the result, but this is rapidly reaching a saturation point, where all units are equal and production is going on in a fair-minded and sane way, and is establishing a confidence all the way along the line.

Without a doubt the season of 1921 will be a banner year in the accessory business, for the dealer has been taught to see that every driver of a car into his place with a definite thing in mind is a prospect for a sale of some additional article, and the profit to be derived from a little effort on his part will greatly increase the profit side of the ledger.

Every motorist is interested in the saving of an expenditure, and constant survey of the accessory field by the dealer will work wonders. Plan your business in your mind, and it will surely bear fruit.

S. E. RYDER,
Moto Meter of Canada

Give Service and Business Will Come

THE late Jas. J. Hill is reported to have said that anyone, who was a bear on America, was a fool. The same might be truthfully said of the automobile industry.

Doubtless 1921 will be a time when people will be scrutinizing motor car values more closely than in the past, but those solid, substantial manufacturers and distributors who have given their customers full value and real service in the past and have conducted their establishments on a business basis, and not as a "game," will, without doubt, enjoy a reasonably profitable year in 1921.

W. L. COWAN,
Packard-Ontario Motor Co.

Optimistic Outlook for Dairy Equipment

During 1921 the Dealer Will Find it Much to His Advantage to Study Dairying and by Advice and Suggestion to Prospects He Can Gain Their Confidence and Attract Much of the Business in His Locality

THE dairy cow has been a wealth producer for the farmer in all ages. Whenever men have failed in any year to reap a satisfactory living from the soil they have fallen back upon the old cow to pull the both ends together, and she has never failed to make good.

Men who have stuck to dairying have had something real to show for their effort year after year, while crop failures have frequently left ruin in their wake among farmers who depended upon grain alone for their livelihood.

High Price For Dairy Products

While grain prices are somewhat lower than we hoped, dairy products still demand comparatively high prices. Will it not then be better for the farmer to let his cows turn the less profitable grain into the more profitable dairy products, milk, cream and butter?

Canada, fitted as she is by nature for raising grain, has given less attention to dairying than other countries, especially in the West, but her farmers are not ignorant of the virtues of the cow. More and more they are adopting what is called mixed farming in which dairying and grain growing share equally in the attention of the owner.

As capitalists have seen this change take place they have established creameries and other milk manufacturing plants in convenient places so that the farmer who wishes to share in the benefits of dairying may have an easily accessible market for his products.

Canada Big Field for Dairy Machines

It seems reasonable then that the new year will open a sale for dairy machinery to Canadian farmers that has not existed formerly. The far-sighted dealer will contract for some high-grade line of cream separators, milking machines, and other milk and butter accessories, for these lines should prove more readily saleable than any other lines of farm equipment.

One reason for this is the fact that while machinery has advanced considerably in price, cream separators have not increased proportionately. Butterfat has soared to unheard of heights during the past few years and still stays well above the pre-war figure.

The dealer will find it much to his advantage to study dairying, for by his counsel and suggestions to prospective dairymen he can gain their confidence and attract a considerable portion of the business of a locality.

As a field for the sale of dairy machinery Canada is to-day better than virgin territory, for she has had her awakening to the possibilities of this branch of farming and now only needs the combined efforts of manufacturers and dealers to make her one of the most profitable markets.

M. M. HUNTING,
International Harvester Co. of Can.

* * *

Cream Separators Profitable Line in 1921

By W. J. ELLIS, R. A. Lister & Company of Canada

THE cream separator may be regarded as pre-eminently the "best seller" in farm and dairy machinery. Everywhere and all the time there is a demand for cream separators, no matter whether times are good or times are bad.

There are lots of people who will tell us that times are bad to-day, and that the business outlook is poor, and there is no doubt that times will be bad and the outlook will be poor for people who are content to look at it in that way, but for those who are determined to make business good by maintaining a constant effort and an optimistic outlook there is no doubt in the world that business will be good, and that the outlook for 1921 is as good as the coming year's outlook has ever been.

This is especially the case in connection with cream separators. If we go to the root of things the only condition that could make business bad is that the buyer should not buy, and the only reason for the buyer not being willing to buy is the expectation on his part that by waiting until later on he will be able to buy cheaper. He may base this opinion upon the assumption that present prices are much inflated, and that now that conditions are assuming a more normal aspect inflated prices will collapse.

Separator Prices

It can, however, be shown to the prospective purchaser of a cream separator that the price of the cream separator to-day is very little more than it was twenty years ago. The increase over the prices which existed in 1914 is a mere 20 per cent. or 25 per cent.

No one expects labor ever to go back to pre-war wages, and we can never expect prices to go back to pre-war levels, and that being so, then the price of a cream separator is as low now as ever it will be.

Having convinced the purchaser of this we can then proceed to show him where by waiting a month or six months he may lose as much in the loss of butter fat as would pay for half the cost of the cream separator.

To maintain and increase sales in 1921 may necessitate greater business efficiency and more intelligent sales methods, but there is no doubt that the business is there, and no wide-awake business man will begrudge the extra effort that is necessary to secure it.

Not a Side Line

Cream separators, and, to some extent, other dairy supplies, are often spoken of as a side line, but the agent who keeps a business record of the profits made from the various departments of his business and who devotes a part of his time to the organization and development of a cream separator business in his territory, generally regards them, not as a side line, but as one of the best and surest money makers that he handles.

A well known implement agent remarked the other day that he had been handling a line of implements for many years, as well as an agency for cream separators, and it had always been assumed that implements were his main business, and that separators were a side line. As a matter of fact, the reverse was the case, and it was the cream separator agency that was the mainstay of his business.

Three Outstanding Features

There are three outstanding features in connection with the cream separator business that will appeal to every agent in 1921 and these are:—

(a) The small increase in prices over pre-war figures appeals to the buyer and makes sales easy.

(b) The impossibility of dairying without a cream separator, and the daily loss incurred through the use of a poorly made or wornout cream separator are so obvious that the sale is half made before the salesman opens his mouth.

(c) Cream separator sales bring to the local dealer the largest amount of business with the minimum of expense. There is no assembling, and with the old-established and widely distributed makes of machines there are no constant demands on the time of the agent for attention and service. The machine can be set up and started in a few minutes, the settlement taken on the spot, and the profits varying from 25 per cent. to 35 per cent.

* * *

Santa Put 'Em Way Up in the Top,—But

They Can Get 'Em With the Ladder.

—*Motor World*

Times Are Changing, But They're Going Ahead

By C. D. COOK, of DeLaval Co.

THE times can be compared to a horse in a treadmill, you have to keep moving just to stay where you are. Times are changing, but from a sane business viewpoint they are changing for the better. The market for dairy products is always with us and does not depend upon the season, because the old saying holds true at all times of the year that the surest way to a man's heart is through his stomach, and though times may change, people will still want butter, milk and cheese. Such being the case the dairymen will require the equipment needed to produce them. The dealer handling dairy machinery need never fear that they will be classed as luxuries, or the demand will fall off; that's impossible as long as the world must be fed.

Anti-Glare Devices and Their Adjustment

Accessory Dealers Can Perform a Service to Their Customers and Incidentally Reap Much Profit by Selling Approved Anti-Glare Devices and Providing a Complete Service for Adjustment of Same

By G. R. DONALDSON

A SERIES of tests of various devices for the elimination of glaring head-lights, carried out for the purpose of making an amendment to the Ontario Motor Vehicle Act practical, brings to a completion all of the preliminary work to prevent glaring head-lights on motor vehicles travelling on Ontario roads. The enforcement of the provisions of the amendment has been taken up in just as thorough a manner, and dealers throughout Ontario can perform a service to their customers with profit to themselves by pointing out to every automobile or truck owner that it is obligatory to have an anti-glare lens on their lights before a license will be granted to them this year. The opportunity offered to Ontario dealers is of just as keen interest to dealers in all parts of the Dominion because the movement is spreading rapidly and other provinces have taken or are taking similar steps immediately. The provisions of the amendment read as follows:

(4) "It shall be unlawful to carry on a motor vehicle any lighting device of over four candle power, equipped with a reflector, unless the same shall be so designed, deflected, or arranged that no portion of the parallel beam of reflected light, when measured 75 feet or more ahead of the lamp, shall rise above 42 inches from the level surface on which the vehicle stands."

(4a) "Any device for the elimination of glare approved from time to time by the Minister of Public Works and Highways, when in proper adjustment and having a lamp of candle power not in excess of that authorized by the Minister for such device, shall be held to be in conformity with the next preceding sub-section."

To provide car or truck owners with a complete service in keeping head-lights in proper adjustment some service stations are providing a head-light testing service. This can be given at little or no expense and is of tremendous value to the customers. Incidentally it gives a dealer an opportunity to take the fullest possible advantage of the sale and incidental profit brought on by the demand caused by this legislation for approved head-light lenses.

The dazzling glare from motor vehicles is caused by the direct beam of light thrown from the reflector of the head lamp. The Government in response to a popular agitation had to legislate to overcome this glare and now it is necessary that the rays be controlled and deflected so that they will not ordinarily reach the eye of an approaching driver or pedestrian, and also the reflected rays will be diffused so that the brilliancy is reduced and is not dangerous.

The car or truck driver on the other hand demands that he have ample light on the road, and that it does not require an excessive amount of electricity to give this light. When the tests of lenses were being carried out it was found that some methods of preventing the glare absorb so much light that it would be necessary for safety's sake to increase the candle power of the lamp excessively.

Prof. A. T. Laing, of Toronto University, conducted the tests of the various anti-glare devices submitted. The tests were conducted in the Hydro-Electric laboratories in Toronto and were on the lines laid down with specifications for road lighting as recommended by the Illuminating Engineering Society. The main features were also approved by authorities in Great Britain.

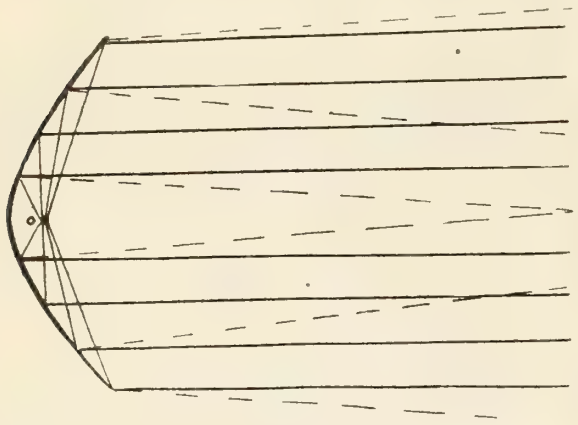

Fig. 1.

Fig. 1a.

Light projection from parabolic reflector with filament of bulb at focus.

Safety and comfort in driving are dependent on a clear view of the road and objects upon it by all travellers. Without such a view the most careful and skilful driver is a menace to the travelling public. Unless he can see the travelled way for a sufficient distance ahead of him to enable him to guide and control his vehicle, whether it be horse-drawn or self-propelled, his skill and care are of little avail. When the chief mode of travel was with the horse artificial illumination of the roadway was seldom necessary. Unless the night was extremely dark and the sky overcast, or unless the road passed through woods or was lined with large trees, the natural light was sufficient. If we could not see the road, the eyes of the horse, sometimes keener than our own, gave warning of danger, and the low speed of travel rendered stopping in a short distance possible.

Illumination in front of a motor vehicle, however, must be so arranged, according to a report by G. C. Parker, an engineer of the Highways Department that other vehicles and pedestrians are visible when within a reasonable distance from the motor vehicle and in addition the driver should be able to see the road surface for some distance ahead of him in order that he may avoid irregularities or reduce his speed when approaching them.

Because all of the light is required in one direction—in front—reflectors are almost invariably of the parabolic type. If the bulb is not focused properly in the parabola part of the light beams may travel upwards and directly into the eyes of approaching drivers quite as effectively as if the whole reflector was tilted upwards.

It is absolutely necessary, therefore, that the proper adjustment and focusing of the head-lamps be fully understood before it is possible to do away with glare. Mr. Parker's investigation of this matter is the basis for the following pictorial explanation of the focusing question.

Fig. 1 shows diagrammatically how the rays of light from the lamp at the focal point of the reflector "O" strike the surface. The heavy lines represent the main rays and the dotted lines the stray or divergent rays. If the centre of the filament is behind the focal point "O" of the reflector even as much as one-eighth of an inch, the beam of light will spread, as shown in the diagram, Fig. 2. The rays reflected from the upper half of the reflector are thrown upwards and those from the lower half downwards. When the lamp filament is moved to a point slightly in front of the focus "O," the rays from the bottom half are thrown upwards and across those from the upper half, which are thrown downwards. This is shown in diagram, Fig. 3. An observer would observe a bright glare from the lower half of the reflector, since it is these rays that are projected upwards.

In order that the different parts of the headlamps with which the majority of motor vehicles are equipped may be understood and the various methods of making the necessary adjustments may be followed, a sketch of a typical headlamp is shown in Fig. 1, and the names of the various parts composing it, as defined by the Society of Automotive Engineers, are shown.

Every headlamp has a lamp socket adjustment, but this device takes different forms in the lamps produced by various manufacturers. The methods

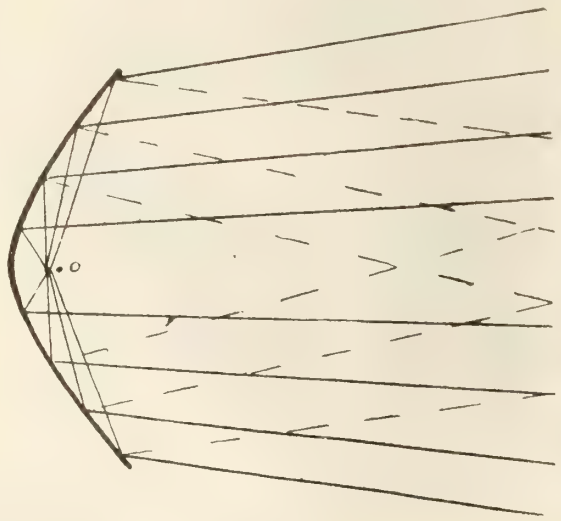

Fig. 2.

Fig. 2a.

Light projection from parabolic reflector with filament of bulb behind focus.

of adjustment most commonly used are shown in Fig. 5.

Fig. 5a shows the adjustment at the back of the lamp housing, which is a small screw. By turning this with a screwdriver the lamp socket is moved forward or backward in the reflector.

Fig. 5b shows a device similar to that in 5a, except that a knurled nut is used in place of the machine screw.

Fig. 5c shows a method of adjustment from the front of the reflector. A small screw above the reflector is connected to the lamp socket by means of a bent rod. Turning this screw moves the socket forward or backward.

Fig. 5d shows a method which necessitates the removal of the reflector from the lamp housing. The bulb is set in the proper position and the small set-screw tightened.

Fig. 5e shows a method whereby the lamp socket is held in place by means of a ratchet. Turning the bulb to the right or left and at the same time moving it forward or backward to the desired position completes the adjustment.

There are two general types of lamps in common use, the ordinary vacuum lamp and the gas-filled lamp. These may usually be distinguished by the form of the filament. In the vacuum lamp the filament is in the form of a small spiral, while in the gas-filled lamp it is in the form of a small coil, held between the two "leading-in" wires and coming to a point between them.

On the base of the lamp is usually stamped the voltage and current for which the lamp is designed, and the approximate candlepower. The light produced by a lamp is governed by the current (number of amperes) consumed. Thus a standing 6-8 volt lamp with 2.00 amperes is rated at approximately 12 candlepower, while the same type of lamp with 2.50 amperes gives approximately 15 candlepower.

In order that the headlamps may be properly adjusted the car should be placed on a level floor, facing a blank wall from 25 to 50 feet distant. At a height of 3½ feet from the ground a horizontal line should be drawn on the wall, since the main light should not rise above this height if glare is to be done away with. Each lamp should then be focused until the field is as small as possible.

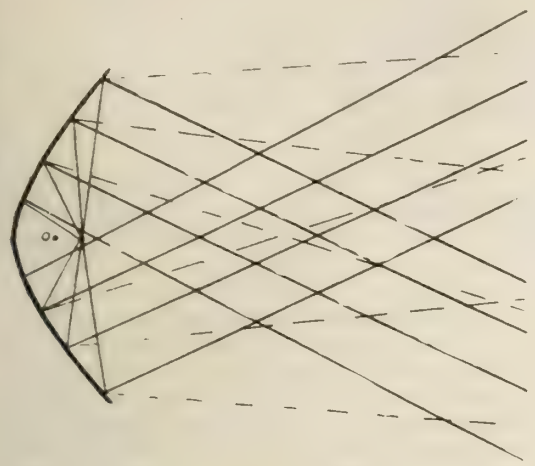

Fig. 3.

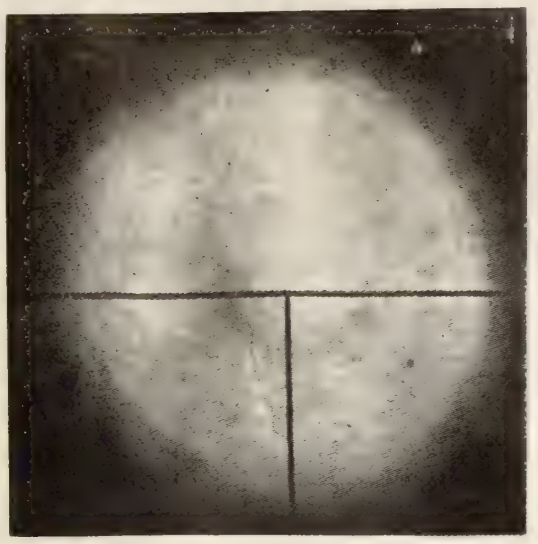

Fig. 3a.

Light projection from parabolic reflector with filament of bulb before focus.

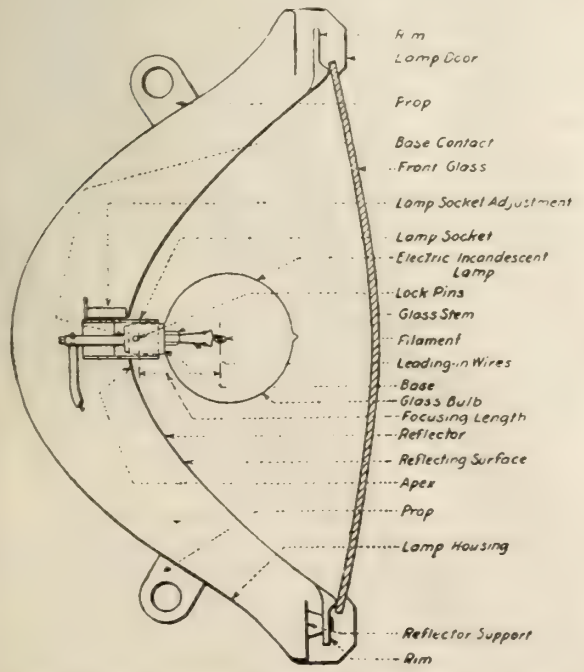

Fig. 4—Top sectional diagram of headlamp, showing details of construction.

While one lamp is being adjusted the other should be covered or turned out, in order that there may be no confusion between the fields from the two headlamps. Having the lamps in focus, the next step is to adjust the brackets so that the light is below the 3½-foot line and falls directly to the front or slightly outward, depending on the wish of the driver. This adjustment may be made by loosening the bolts at the base of the brackets and tightening them with the bracket in the desired position, or by removing the lamp housing and bending the forks.

If anti-glare devices of the type which deflect or cut off a portion of the light are to be used the same procedure should be followed but with the particular device in question fitted to the headlamp.

The tests were carried out in the following manner:

A pair of headlamps was mounted on a frame in such a manner that they could be rotated in the horizontal and also in the vertical plane. In these lamps the devices were set in the regular manner, and the combined light from the two lamps was projected on a screen sixty feet distant. The intensity of the light was measured at six points on the screen as follows:

(a) In the median vertical plane parallel to the lamp axes, on a level with the lamps. (b) In the same plane one degree of arc below the level of the lamps. (c) In the same plane one degree of arc above the level of the lamps. (d) Four degrees of arc to the left of this plane and one degree above the level. (e) Four degrees of arc to the right of this plane on a level with the lamps. (f) Four degrees of arc to the right and two degrees below the level of the lamps.

The devices were required to give the following observed apparent candle power at the above points:

Points (a) and (b): At at least one of these or at some point between them not less than 4,800 c.p., thus securing sufficient light for safe driving.

Point (c): Not more than 2,400 c.p.

Point (d): Not more than 800 c.p., thus removing dangerous glare.

Points (e) and (f): At at least one of these or at some point between them not less than 1,200 c.p., giving sufficient light to clearly define the side of the road.

The incandescent lamps used were of the regular 6-8 volts, vacuum and the gas-filled types, and were carefully adjusted to give their rated candle power at rated efficiency. It will be understood that in each case the candle power given is the maximum permissible under the conditions stated.

The following are the conditions under which the devices named may be used and secure satisfactory results on the highways:

A "horizontal beam" is one in which the axis of the beam, with the car under a normal load, is parallel to the level surface on which the car stands.

"Tilt" is the amount in feet by which the axis of the beam must be depressed at a point 100 feet in front of the lamps.

"Focal adjustment" No. 1 is when the lamp is at the focal point of the reflector, giving a beam of least cross-section. No. 2 is when the lamp is back of the focal point, giving an enlarged beam with small dark spot in the centre. No. 3 is when the lamp is between point 1 and point 2, and No. 4 is when the lamp is in front of the focal point, giving a beam similar to that of No. 2, but the rays are convergent and cross each other.

APPROVED DEVICES

Name of Device	Permissible c.p. of lamps Vacuum, or Type "B"	Gas filled, or Type "C"	Focal Adjustment	Tilt from Horizontal Beam Ft. in 100 ft.
Sun-Ray	24	27	1	1
Holophane	18	21	1	0
Sills-rite-lite (Green Top)	21	21	1	1
Sills-rite-lite (Clear)	18	21	1	1.5
Benzer	24	27	1	0
Primolite	18	21	1	0
Violet Ray	21	21	1	1.5
Sunlite	21	21	1	3
Kopps	21	21	1	1
Liberty	24	27	1	0
Macbeth	21	27	1	0
Clamert	24	27	1	0
Patterson	21	27	1	0
Lee Knight	24	24	Manufacturer's	0
McBride	18	00	4	0
McBride	24	21	4	1
Levelight	24	21	4	0
Raydex	24	32	2	0
Conophore (Clear)	21	21	1	0
Conophore (Noviol)	24	24	1	0
McKee	21	21	1	0
Osgood	21	21	Manufacturer's	0
Shaler Road-lighter	21	21	2	0
Legalite M III	24	27	1	0
New Stop Glare	24	32	3	0

Alvo.—A double reflector with the adjustments of the sample submitted, gives a beam which meets the requirements when used with the following incandescent gas filled lamps, Type "C":

Upper reflector ..... 27 c.p.
Lower reflector ..... 32 c.p.

Cars taking the lighting current from flywheel generators should give one foot tilt in addition to what is specified in the above list.

Home-made devices can easily be improvised as follows: Use incandescent lamps from 18 c.p. to 24 c.p. and horizontal beam, and by use of paint or paper cut off lower half of reflector, using No. 4 focal adjustment, or cut off the upper half and use No. 2 focal adjustment.

Following are the trade names of the lenses that have been approved to date: Sills Rite-Lite, Sun-Ray, Holophane, Levelite, Patterson, Benzer, Liberty, MacBeth, Clamert, McKee, Violet Ray, Raydex, Shaler, Conophore, Primolite, Kopps, Osgood, Legalite, Lee Knight, Alvo, McBride, Sunlite, Ryan, National, New-Stop Glare, Johnson.

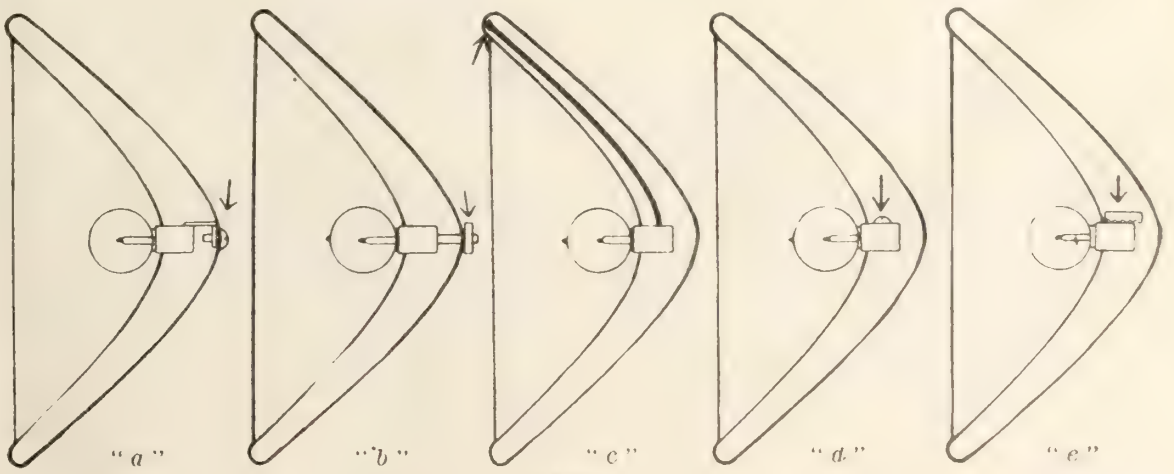

Fig. 5.

Five methods of bulb adjustment commonly used.

When Should the Dealer Put in New Parts

By F. H. SWEET

Repair men are often at a loss when to replace an old part. This is, practically, one of the most disagreeable problems which they are confronted with. Several methods have been evolved to meet this difficult situation. The writer of this article describes some of these methods and gives some useful hints which will be helpful to repair men generally. After all is said, the chief thing in making a repair is to see that it is done properly. If a part has become worn so that, in the repair man's opinion, it is no longer effective, to do a good job, a new part must be added.

ACADEMICALLY, the question is quite simple. An old part is either still fit for service, or it is not. Practically the new part problem offers one of the most disagreeable questions the repairman has to answer because opinion will vary on the point of when a new part is actually necessary.

He must put in new parts to replace those which have been worn if he is to turn out an honest piece of work. Yet the instant he puts in one tiny part which the car owner thinks is not necessary he is branded a thief and a robber, and, of course, in six cases out of seven the owner always knows more about cars than does the most expert mechanic.

Blanket Instruction Clause

To meet this difficult situation repairmen have evolved several methods. What has been used possibly more than any other is the blanket instruction clause in the repair order form signed by the car owner. This empowers the repairman to supply all parts which prove necessary and is a legally binding provision. But it is far from satisfactory.

So some repairmen have attempted to write into the order form a complete list of the parts necessary. But this has obviously been unsatisfactory, because in cases of extensive repairs exactly what is needed cannot be determined until the work has progressed at least to the tearing down of the car.

Still other repairmen have asked the consent of the car owner before putting in new parts. This naturally results in considerable delays in the work, annoyance to owners, and eventually dissatisfaction, for owners usually do not know whether a part is actually required or not.

Broad General Policy

So, after all, what is most needed for an adequate solution is not so much a single hard and fast system as a broad general policy. In the last analysis the relation between a car owner and the repairman is a confidential one. The repairman is the car doctor.

In the light of this fact it will do little good for the repairman to inform the owner in a blunt, high-and-mighty manner that, "We'll put in what new parts we think are necessary. We know more about that than you do." Neither will it do to call the owner to the telephone and inquire meekly: "Do you want your brakes relined?" There must be a conscious, rather subtle to be sure, but continuous effort on the part of the repairman to win and hold the confidence of the car owner.

As a first step in this direction a probable list of the new parts required can be prepared and shown to the owner in advance of beginning work whenever possible. The owner will then know, at least roughly, what to expect.

Helpful Detail

In this connection there is a detail which should prove helpful. When giving an estimate of probable cost be sure that the estimate is some higher than the eventual cost can possibly be. An owner who has been given an estimate of $20 on new parts for a differential will feel far better when the actual charge proves to be only $16 than he would were he to be informed that the charge is $24.

The blanket instruction clause should be retained in the order form by all means. It is a legal recourse of value in dealing with a possible unscrupulous customer. But it should be supplemented in practice by a request for permission when unforeseen developments show that a large or expensive part is to be needed.

It is all well and good for one to have the legal right to charge a $50 cylinder block to an owner's cost account. But if the owner is informed courteously by telephone that examination has revealed that this block will be necessary he will be in a far more agreeable mood to pay this $50 than were he merely confronted with the bold figures in his itemized bill.

Even at its best, the new-part problem presents continuous opportunities for disastrous complications. But if handled in the manner suggested there is an equal, if not greater, opportunity to make it an asset in the repair business instead of a heavy liability, as it has so often become. The essential thing to be kept in mind is not only to treat the car owner fairly, but to see that he understands that he is being treated fairly.

Use of Tractors in Lumbering Operations

By J. CROW TAYLOR in "Lumberman"

THERE appeared recently a photographic illustration showing a ten-ton caterpillar tractor with four loaded eight-wheel log wagons trailing behind it. Underneath it was this line: "Ten-ton tractors are now able to pull thirty-ton loads over our dirt highways."

For some time now there has been keen interest on the part of both millmen and tractor makers in the subject of tractors in the woods, especially in the lowland logging woods for logging operations. Many experiments are being tried. Some are proving disappointing, some show that mistakes have been made, some demonstrate remarkable possibilities, and gradually we are getting at some understanding of the possible future, nature and extent of the usefulness of the tractor in the logging woods.

A friend of the writer has had a ten-ton tractor in some logging operations in the hardwood belt of Louisiana quite a while now, and the picture referred to was so suggestive of this instance that following its appearance the owner of the tractor in question was interviewed as to how it was getting along and as to whether he thought tractors were to replace short line logging roads, or whether their mission would be more to replace horses, mules and cattle in logging.

The Main Trouble

First he told of some troubles he had had with the tractor. It is a ten-ton caterpillar, one of those "tanks" made famous by the war, and he said he thought he had made a mistake in the size; that a five-ton would have been better. He said the ten-ton tractor would pull thirty tons with proper trailers behind it, in fact it would pull anything that would hitch on to it, but that was not the trouble. The trouble happened to the things it was pulling. In the logging woods, if the wheels of a wagon mired down, or if it stuck a stump or something, the tractor would march right ahead and often the wagon would be torn to pieces. That, he said was the main trouble, hitting obstructions in the woods with the wagons. He figures that a smaller tractor, with only one or two wagons trailing behind, will give better results in logging operations proper.

He figured, however, that with a larger size good service can be had in short hauls over good dirt roads to the railway; that is, a ten ton tractor with a proper equipment can be made to haul a carload at a time, of lumber or similar products, and in many instances it will solve the hauling problem from mills in the woods to the railroad.

Great Service Possibilities

From his experience he was very emphatically of the opinion that the tractor will not, to any extent, replace logging railroads. He does think, however, it will, to a great extent, replace horses, mules and oxen and in this respect will render great services. He thinks for the woods operations the lighter machines will be better, and for all tractor work, whether hauling logs or hauling the lumber to the railroad, the tractor wagons should be specifically designed for tractor work. The great trouble with hitching the ordinary wagon behind the tractor is in tearing up the wagons and pulling them to pieces when they hit some obstruction.

The indications are that tractors and trucks will both play an important part in log and lumber hauling from now on. The caterpillar type of tractor especially offers advantages in the lowlands for logging operations. Both trucks and tractors should do much to help solve the problem of hauling from country points to railroads.

It will take some time to develop proper roads in some instances, and from experimenting we will have to learn the types of tractor best adapted to a given service or kind of ground, but during the next year or two we should be able to develop from the experimental into the readily practical and successful use of tractors on a larger scale in woods operations.

Motor Transportation Has Assured Place

MOTOR transportation now occupies an assured place among systems for the carriage of freight and passengers, the National Bank of Commerce in New York says in the December number of its magazine, Commerce Monthly. The older transportation systems will eventually adjust their facilities to accommodate the traffic for which they are best adapted, so that the motor truck must bid for business on the basis of efficiency alone. That it will meet this test there is no doubt.

Truck Supreme for Short Haul

Trucks are still carrying a considerable amount of freight which formerly went by rail, and it is probable that they will take more of this business in the future; but it is no longer to be feared that the railroads will be injured by this diversion of traffic. As the railroads adapt themselves to the increased post-war traffic the use of motor trucks will be confined to the field in which their superiority can be demonstrated. The limit is proportionate to the railway terminal costs of the locality. In a region of very high terminal costs it has been estimated at about 125 miles. With the exception of shipments of goods for unusually fast delivery it does not pay to ship by truck beyond this distance when railroad operation is normal. On the other hand, for shipments of 50 miles or less, the advantage is all with the truck.

Railroad rates for short hauls are inadequate to meet the high proportionate terminal expense involved. Short haul freight in less than carload lots contributes nothing toward overhead expenses or profit and may even cause serious losses by increasing terminal congestion.

Truck Valuable Supplement to Railway

Motor trucks are valuable supplements to railroad systems when operating as feeder lines. The motor truck operates with success in districts formerly handicapped by inadequate transportation facilities and here performs a valuable service in creating new business. Motor express lines, privately owned and operated as public carriers, radiate from nearly all large metropolitan centers. Through these truck lines the farmer can sell his produce without loss of time and at a minimum of expense, and often is enabled to serve markets heretofore quite out of reach. Such marketing methods appear as the best solution of the difficult problem of supplying great cities with perishable foodstuffs, as it gives the city access to producing areas within a wide radius, many of which enjoy no other means of transportation, or at best slow and expensive facilities, which discourage the daily shipment of perishable freight.

In passenger carriage for public service the motor vehicle encounters the active opposition of electric railways. The outcome is not yet apparent, for the proper division of the field can come about only through free competition, and this unfortunately is not the situation where franchises are granted and rates fixed. The trolley car and the omnibus have distinctive qualities, however, which recommend each for particular types of service. The extent of the use of omnibuses in the United States is indicated by the fact that more than 9,000 are registered in New York City alone.

Farmers Largest Users

Farmers are now the largest users of trucks in this country, as they own 10 per cent. more than manufacturers and 15 per cent. more than retailers. The U. S. Department of Agriculture reported that more than 49,000 farmers were using approximately 78,000 motor trucks in 1919.

The development of the industry to its maximum efficiency depends upon prompt solution of two problems which now confront it. These are the questions of fuel supply and the provision of proper highways.

Fuel Supply

The production of motor fuel has not kept pace with its consumption. Between 1909 and 1918 the number of motor vehicles in use in the United States increased about 1,700 per cent., while the domestic production of gasoline increased but 560 per cent. and that of crude oil, the source, but 95 per cent. For the future, when the price of gasoline makes its extraction from shales and the use of substitutes commercially possible, there will probably be sufficient motor fuel at much higher prices than those of to-day. Motor transportation finds no threat of extinction in the fuel situation, but only the necessity of modification.

Highway construction and maintenance have always been a problem which has now become so pressing as to cause alarm. Under the present system of road financing it is impossible to build all roads of a type which can bear heavy truck traffic. A good concrete road costs from $50,000 to $70,000 a mile to build, which is more than most communities can afford. The cost of providing highways for motor trucks is properly a part of their operating expenses.

All Ready for the Montreal Motor Show

THE display of motor trucks and automobile accessories at the Montreal Motor Show promises to be in every way superior to the show of previous year.

The Motor Show will be held from January 22nd to January 29th in the Motordrome Building, 228 Sherbrooke St. East, under the auspices of the Montreal Automobile Trade Association, Limited.

Adelstan Levesque, active secretary and assistant manager of the exhibition, has handed out the official revised list of exhibitors, which is given herewith. It shows the concern exhibiting and its business address:

Canadian National Carbon Co., Ltd., 743 Champagneur, Montreal; L'Air Liquide Society, 1 Ernest street, Montreal; Arlington Bicycle Co., 330 Beaver Hall Hill, Montreal; A. J. Hopkins, 336 Brock north, Montreal West, Montreal; Champion Ignition Co., Flint, Mich., U.S.A.; Ames-Holden-McCready, Ltd., 1221 Mount Royal avenue east, Montreal; Montreal Motorist League: Champion Spark Plug Co., Ltd., Windsor, Ont.; Semmelhaack-Dickson, Ltd., 333 St. James, Montreal; Armstrong Whitworth of Canada, Ltd., 300 St. James street, Montreal; Hyslop Bros., Ltd., 20 Shuter, Toronto; Detroit Radiator Co., 219 Ontario west, Montreal; McKinnon Industries, Ltd., St. Catharines, Ont.; W. L. Thom Oil Co., 127 McGill street, Montreal; Mr. E. L. Cherry, 325 St. James, Montreal; F. J. McKeeman, 1061 Laurier west, Montreal; Coffield Tire Protector, 172 Bleury, Montreal; Carriages & Factories, Ltd., 144 Craig west, Montreal; Gotfredson Joyce Corp., Ltd., Walkerville, Ont.; W. L. Renton Co., 16 Jarvis street, Hamilton, Ont.; Frigon & Baker, 1007 St. Catherine west, Montreal; Montreal Motor Sales, Ltd., 120 Sherbrooke west, Montreal; John Millen & Son, Ltd., 323 St. James, Montreal; Willys-Overland, Ltd., Park avenue and Sherbrooke street, Montreal; K & S Tire & Rubber Goods, Ltd., 17 Park avenue, Montreal; Ludger Gravel & Fils, 28 Place Jacques Cartier, Montreal; Montreal Vehicle Motor Co., Ltd., 471 Phillips Square, Montreal; Renaud Motor Supply Co., 326 St. Catherine west, Montreal; Dominion Rubber System (Quebec), Ltd., 291 Craig west, Montreal; Gutta Percha & Rubber, Ltd., 359 St. James, Montreal; Ginsberg Motor Co., 288 St. Catherine west, Montreal; Canadian Fairbanks-Morse, Ltd., 84 St. Antoine street, Montreal; Lemieux & Cropping Motor Distributors, Ltd., 215 Beaver Hall Hill, Montreal; Lavoie Automotive Devices, 294 Wilson avenue, Montreal; Goodyear Tire & Rubber Co., Ltd., 318 St. James, Montreal; Gray Dort, Ltd., 421 Selby Montreal; John H. Feeley, 411 Aylmer, Montreal; Cadillac Motors, Ltd., 7 Park avenue Montreal; McLaughlin Motor Car Co., 664 St. Catherine west, Montreal; General Automobile Equipment, Ltd., 720 Dorchester west, Montreal; Northern Electric Co., Ltd., Notre Dame and Guy streets, Montreal; Motor Mart of Montreal, Ltd., 3 Park avenue, Montreal; Montreal Motor Corp., 928 St. Catherine west, Montreal; Goo & Patrick, 97 Jarvis, Toronto; Canadian Oil Co., 123 Bridge street, Montreal; Loyal Oil Co. of Canada, Ltd., 807 Notre Dame east, Montreal; H. H. Mellor & Co., Transportation Building, Montreal; Motor Sundries Corp., Ltd., 32 Front west, Toronto; Robert H. Hassler, Ltd., 164 Sherman avenue north, Hamilton, Ont.; L'Automobile au Canada, 27 rue Buade, Quebec; Montreal Automobile Co., 864 Papineau, Montreal; Prest-O-Lite Co. of Canada, Ltd., 831 St. Catherine W., Montreal; McLaren Bros., 138 Bleury, Montreal; Canadian Motor Sales Co., 1246 St. Catherine E., Montreal; Oak Tire & Rubber Co., Ltd., 342 St. James, Montreal; Universal Tire Service, 209 Park avenue, Montreal; Omer DeSerres, 204 St. Denis, Montreal; Modern Vulcanizing Co., 415 Bleury, Montreal; Lamontagne Ltee., 338 Notre Dame W., Montreal; Rapid Tool & Machinery Co., Ltd., 170 St. Joseph, Lachine, Que.; Gray Bros., 109 Sherbrooke W., Montreal; Montreal District Ford Dealers, Ltd., 72 St. Gabriel, Montreal; Allied Motors, Ltd., 124 Sherbrooke W., Montreal; Albion Motor Car Co. of Canada, Ltd., 63 Prince, Montreal; G. M. Primm, 345 Craig W., Montreal; Packard Montreal Motor Co., Ltd., 307 University, Montreal; Franco-Canadian Automobile Co., Ltd., 354 Bleury, Montreal; Maple Leaf Mfg. Co., Ltd., 999 Christopher Columbus, Montreal; White Co., Ltd., 3 Park avenue, Montreal; Imperial Oil Ltd., 918 St. Patrick, Montreal; McColl Bros., Ltd., 1470 Notre Dame street east, Montreal; Cutten & Foster, 5 Park avenue, Montreal; S. F. Bowser & Co., 20 St. Nicholas, Montreal; Dominion Chain Co., Niagara Falls, Ont.; Pierre J. LeMay & Cie, 228 Sherbrooke east, Montreal; Grenier Motor Co., Ltd., 15 Park avenue, Montreal; Mutual Motor Truck Co., Ltd., 368 Union avenue, Montreal; Ledoux-Jennings Co., Ltd., 93 Osborne, Montreal; Legare Automobile & Supply Co., Ltd., 180 Amherst, Montreal. The Atlas Oil Co., 171 McGill street, Montreal; The Charlebois Co., Ltd., 43 St. James, Montreal; The Kemp Metal Auto Wheel Co., Ltd., 802 Lumsden Building, Toronto; The Pennsylvania Piston Ring Co., 203 St. Clair avenue, Cleveland, Ohio; Mitchell Brass Foundry, 400 Hanna street, Windsor, Ont.; Canadian Raybestos Co., Perry street, Peterborough, Ont.; The Skinner Co., Ltd., Gananoque, Ont.; Motor-Trade H. Gagnier, Ltd., Toronto, Ont.; Motor Magazine, H. Gagnier, Ltd., Toronto, Ont., Montreal Vehicle Motor Co., 471 Philips Square, Montreal; Champion Spark Plug Co., Windsor, Ont.; Montreal Motorist League, Room 11th, Windsor Hotel, Montreal.

The London Motor Show

PLANS are now completed and final arrangements made to hold the first annual National Motor Show of Western Ontario at London from Monday, January 31st, to Saturday, February 5th, inclusive, under the auspices of the London Automotive Dealers' Association and the services of T. C. Kirby retained as manager. Mr. Kirby is well known and popular throughout Eastern Canada, and his many successes in the management of exhibitions of this kind assures complete success. The floor space plans have been issued and the demand for space is enormous and exceeds all expectations. Many new cars will be on the show floor never before seen in these parts, and many manufacturers are showing direct from the factories on account of having no agencies in the district. The vast and spacious armouries will be specially heated for this occasion and the comfort of visitors will be studied in every way. Orchestral concerts will be given twice daily and special features arranged for every night. The decorating scheme will be a most elaborate one and the lighting effects will be made to blend with the decorations as well as giving additional light.

A large supply of seats will be placed in the spacious galleries to enable visitors to rest and listen to the music.

A Winter Campaign to Sell Tractors

By ARNOLD P. YERKES

THE story has come down to us that when Mohammed ordered the mountain to come to him and the mountain failed to move, he exclaimed if the mountain would not come to Mohammed, Mohammed would go to the mountain. There is a lesson in this story for the tractor dealer who has been disappointed in the number of tractor sales he has been able to make this winter. It is a case where the dealer should not wait for business to come to him but should go after the business.

Under the present conditions it is not to be wondered at that a great many farmers rather hesitate to purchase a tractor or even to order one because of the hope that prices may be somewhat lower within a few months. Competent authorities have expressed the opinion, however, that there is very little likelihood of any general reduction in the prices of tractors during the next six months. While there have been some slight price reductions, there have been more increases, and from all indications there is little likelihood of any substantial decline for some time to come. Taking these facts and also the guarantee which a number of tractor manufacturers are giving to their customers, protecting them against any reduction in price in the immediate future, the dealer has a good starting point for a winter campaign on tractors.

Why Farmer Should Buy Tractor Now

There are a number of good reasons why it is to the farmer's advantage to order his tractor now rather then to wait until spring. For one thing, a farmer who buys his tractor several months before spring work begins will have an excellent opportunity to became thoroughly familiar with its care and operation by using it for odd jobs, probably at belt work, and will thus be likely to avoid delays next spring when the tractor is called upon to hurry the spring work. Furthermore, using the tractor for light jobs of belt work is one of the very best ways of breaking it in and helping to prolong its life. It is altogether too common a practice to find brand new tractors taken into the field and put at the heavy work of plowing the very first thing. This means that the tractor motor is required to develop from eighty to one hundred per cent. of its rated capacity before the bearing surface of the cylinder walls, piston rings, engine bearings, etc, have had a chance to become smoothed up and acquire the polish which comes from use.

Most men have learned that it pays to break an automobile engine in gradually and that a car should not be run fast until after it has been driven at least five hundred miles. It is even more important that the tractor motor should be broken in just as carefully, but a great many men who would not mistreat a motor car will abuse a tractor in the manner above mentioned.

Then too, by placing the order early and having the tractor delivered before it is needed for spring work, there will be ample opportunity to make sure that everything is in good working order, for while transportation conditions have improved somewhat in the last few months, if every man who expects to buy a tractor waits until the last moment before placing his order, there is almost certain to be considerable unecessary confusion and delay in making deliveries.

Farmer Has More Time in Winter

There is another good argument in favor of pushing the tractor campaign during the winter months, and this lies in the fact that during this season of the year farmers have more time to read catalogs and other advertising literature than at other seasons. Furthermore, they will have more time to talk the matter over and drop in and look over a sample machine on the dealer's floor.

Instead of accepting the winter months as a slack season for tractor business, therefore, the live dealer, and the one who sees matters in their true light, will put forth his very best efforts to get his prospects sufficiently interested at this time to be willing to place their order now.

Advantage should be taken of every sales help which the manufacturer places at the disposal of his dealers. As already pointed out, farmers have more time to read advertising literature in the winter than other seasons, and the dealer should see to it that all his prospects are well supplied with such material during the winter months. He should not make the mistake of sending a lot of such literature at one time, but should arrange it so that the prospect receives folders and catalogues at intervals so as to arouse and hold his interest in the machine.

Local Paper Advertising

Neither should the dealer fail to take advantage of the opportunity offered by his local papers for carrying advertising of his tractor during winter months. There is no better time to place arguments of tractor farming before the farmers of the community than at this season of the year. If the dealer has sample machines on hand (which every real tractor dealer should have) it would be well to extend invitations through advertisements and the literature which is mailed to prospects for them to step in and look over the machine.

Nor should the dealer fail to make provision for the proper display of the sample machines when the prospects are in the store. If he takes the attitude that the winter is an off season for tractors and relegates his sample machine to some dark corner, he is quite likely to create the same sort of impression in the farmer's mind whereas if the machine is placed in a conspicuous place with all the parts accessible for inspection it is not only easier to go over the machine and point out its different features, but it is also likely to create the impression in the farmer's mind that this is the time to be giving serious consideration to the purchase of a tractor.

Tractors Useful for Clearing Snow

Quite a good many tractor dealers have obtained a large amount of free publicity for their tractors in the past few winters by employing them to open up the streets after heavy snow storms. In some cases they have equipped the machine with a sort of snow plow with which they could move the snow to one side, while in other cases they have simply used the tractor to "buck" their way through, leaving a path which other traffic could follow. Such work offers a good opportunity for the tractor dealer to show that he takes an interest in the community's problems and at the same time if the job is well carried out he cannot help receive a great deal of favorable comment for the performance of his tractor under such condidtions. Furthermore, the use of the tractor in this way will often suggest new possibilities to the farmer and may help clinch some sales.

All in all, there is no reason why the winter season should be a dead one for the live tractor dealer. As a matter of fact, it will be largely the kind of season he himself makes it. If he will go after the business in the proper spirit, it has been demonstrated that he can make a winter tractor campaign successful.

The Retailer and His Banker

Review by a Banker

WE bankers are human, even if some of you business men think otherwise.

Now, the truth of it is that the banker is a good business man. Regard for the law and his depositors, to say nothing of his own financial welfare, demands that he exercise good judgment in place of sympathy when the average merchant asks a loan.

Don't think that we chuckle fiendishly when you need money to pay your notes or the interest on the mortgage, and have to come to us. Don't call us ugly names because we happen to refuse the favor. It's all in the interest of good business. Personally, I might like ever so well to make a loan to Jones or Thompson, who are neighbors and friends, but if I am convinced that it would be poor business, friendship must not count beyond a certain point. To grant loans in some cases would work positive injury to the borrower, as well as to the bank, for borrowing often teaches bad habits.

Many retail merchants cannot understand why bankers are so strict—why financial statements are demanded and why many of these are unsatisfactory. The answer is that not all retail merchants are good business men. They do not possess enough information about their business to make up a reliable statement, as a rule. If they cannot show sufficient cause why they should be trusted with a loan, why should these merchants blame the bankers?

The day of loose business methods is passing fast. Margins of profit are drawing closer and closer, so that it is necessary to do more figuring and better managing to find a profit. Besides, retail businesses are becoming so complex as to stock and seasons and discounts that much greater efficiency is needed to-day than Grandfather needed in his general store twenty years ago.

That is why the banker asks a business-like statement and one that he can rely upon. No guesswork will do. The retail merchant might fool himself about his present worth and profits, but it is not so easy with the banker, who doesn't carry dead stock and dead accounts on his books year after year.

Whom should a banker trust? That depends on a number of things. The merchant may have a rating in some credit bureau. The banker may have had dealings with him before. There may be security or references to look up. A number of things will go to help the banker, as well as the wholesaler or any other business man, decide whether a certain applicant should be accommodated.

This much is true in all cases, however. The retail merchant can do nothing better than to submit a periodical financial statement to his banker, his wholesalers and jobbers and to selected mercantile agencies. Frankness, absolute frankness and honesty, will pay in the great majority of cases, and will serve to give the applicant a better rating than he would otherwise be able to get.

It is safe to say that there are many merchants who do not enjoy the high rating they deserve. This is because they do not take advantage of their cash discounts and because they are not able to furnish a financial statement that does them justice.

Credit is a thing to be jealously protected. Good credit enables a merchant to buy where otherwise cash would be demanded. Reputable wholesalers and manufacturers are coming more and more to favor their best dealers in a number of ways. But the best part of building up a good line of credit is that the merchant is thus prepared against the time when either cash or good credit is needed and needed badly.

What Statement Should Contain

What should a good financial statement contain? It should tell in detail the assets and liabilities of the merchant, and his profit or loss for the past six months or year. There should be no equivocation or false valuations in such a statement. It is surprising how many retailers place artificial valuations on their stock or property, allowing nothing for depreciation, and think they have made an honest, conscientious statement. A statement is untrue if goods are entered at more than their market price or more than they cost, and if fixtures or other property are valued at more than they will bring at a forced sale.

Most banks and credit bureaus can supply statement forms. In cases where, because of a poor bookkeeping system, the seeker of credit is unable to arrive at his net worth, the bank sometimes undertakes to audit his books for him. The best preparation for a financial statement is to have a well-kept double entry set of books. These will yield all the information necessary.

It is through his demand for exactness and truthfulness that the banker stands between the retailer and loose business methods. Much credit is due banking and other institutions which are endeavoring to raise the plane of business methods and financial credit. They are a factor in the big struggle for efficiency.

INTERNATIONAL
Machines and Service

We are over the threshold of the new year. The International agents will go on distributing the machines of this Company in the provinces of Canada. The International Harvester products give them the only complete line of farm machines sold in Canada—and it is a line founded on nearly a century of experience, and trusted among farmers. International machines sell with minimum effort, to farmers who know the advantages of investment in proved lines. The man who sells them profits by simplified handling of repairs, by freight saving, and by association with world-famous International Service, which cements relations among this Company, its agents, and the farmers.

The International Harvester Company of Canada, Ltd., has sixteen large branch houses conveniently located in the best agricultural sections of Canada, which supply over 3,500 local agents with repair parts, twine, and emergency shipments of machines and implements when customers need things in a hurry. These various facts are full of meaning and opportunity for any International agent and for any man who will sell International machines in the future. Write the nearest branch for any desired information.

International Harvester Company
of Canada, Limited
Hamilton - Canada

Western Branches—Brandon, Winnipeg, Man.; Calgary, Edmonton, Lethbridge, Alta.; Estevan, N. Battleford, Regina, Saskatoon, Yorkton, Sask.

Eastern Branches—Hamilton, London, Ottawa, Ont.; Montreal, Quebec, Que.; St. John, N.B.

THERE ARE 16 CANADIAN BRANCH HOUSES, SERVING OVER 3,500 DEALERS, SO THAT YOU MAY BE SERVED PROMPTLY WITH MACHINES, BINDER TWINE AND REPAIRS

The Full Line of
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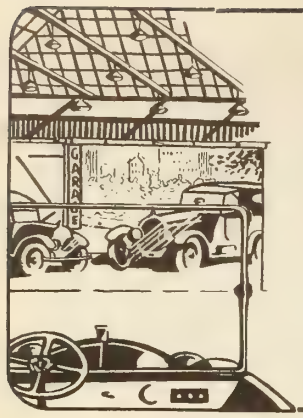
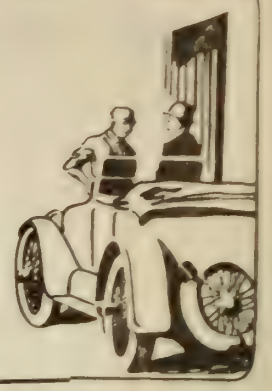
McCORMICK DEERING
Farm Operating Equipment
Motor Trucks
Tractors
Engines

AGENTS, IN CONVENIENT REACH OF EVERY FARM, SELL INTERNATIONAL MACHINES AND STAND BACK OF THE PURCHASER WITH INTERNATIONAL SERVICE



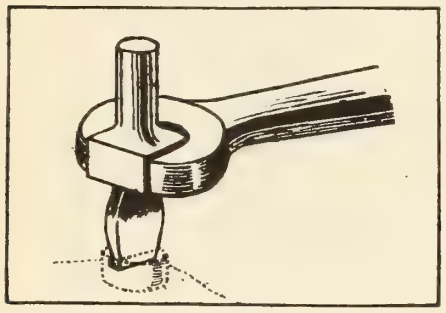
SHOP NOTES FOR THE GARAGE MAN



REMOVING RUSTED-IN SCREWS

OCCASIONS often arise when the ordinary screwdriver is not powerful enough to remove a stubborn screw. In such cases the following device used in conjunction with an ordinary wrench will prove very useful.

Make a screwdriver the shape of that shown in the illustration. Arrange the centre portion of the driver in the



Method Used for Removing Rusted-in Screws

form of a square, the same size as your wrench. It will surprise you the purchase obtainable with a driver of this nature. Screws can be removed quite easily, even though rusted in.

TAPPING SOFT METALS

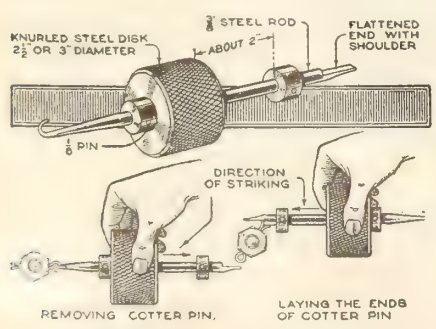
IN tapping soft metals such as aluminum, there is quite often some difficulty in starting the thread, as the tap will at first either ream out the hole in a partial manner or strip the thread after it is started.

Both these dangers can be avoided, and perhaps the simplest method of all is to make an accurately threaded guide block about the same depth as an ordinary nut.

By placing this guide block in correct position over the hole to be tapped, no trouble will be experienced as the tap must then travel through the soft metal at a predetermined rate. Of course the guide block must be clamped to the work. It is essential that the block be fastened, and another point to be watched is the use of a good lubricant.

COTTER-PIN PULLER

FOR removing cotter pins that are difficult to reach the tool shown in the illustration will be found mighty handy and will save many minutes in the busy repair shop. It consists of a ⅜-in. steel rod, with one end drawn to a taper and a hook turned on it, while the opposite end is filed flat for a short distance, leaving a shoulder for laying the ends of the pins. A knurled steel disk is drilled through the centre so as to slide easily over the rod, and two small collars are pinned to the rod about 2 in. apart. The manner of using the tool, which comprises hammer, screwdriver and puller, is obvious from the illustration.



Handy Cotter-Pin Puller

FITTING PISTON RINGS

THE process of fitting new piston rings is fairly simple, but to be properly done considerable care and patience must be exercised, says A. L. Megill in Motor. The function of piston rings is, of course, to keep the compressed gas from leaking past the piston and to accomplish this they must fit the cylinder as perfectly as possible.

There is a great variety of piston rings on the market, some of them of the one-piece pattern and others of the compound pattern. Having ascertained that the cylinder is perfectly round and does not need regrinding, the next step is to decide on the style of ring desired and order same, giving width of the groove in the piston and diameter of the cylinder. Compound rings are much harder to fit than the one-piece style, but they all require the same procedure in fitting and just as much care.

It might not be out of place just here to say a word about manipulating piston rings. Cast iron, of which the rings are made, is very brittle, and, unless handled with care, the rings are liable to be broken when being removed from or applied to the piston. To get them off the piston, the tools needed are three strips of thin steel one-quarter inch wide and about five inches long. The ring should be carefully opened at the joint until the strips of steel can be slipped between it and the piston. By placing these strips at equidistant points around the piston, the ring is very easily slipped off without damage. The method of applying rings is simply the reverse of the above process.

After removing the old rings, the grooves should be carefully cleaned to remove every particle of carbon because the new rings must be made to fit the grooves and any hard carbon on the sides would make the width of the groove deceptive and thereby be the means of causing a poor fit. The tools necessary in fitting are a thin, flat file, a small vise with soft-metal jaw clips, a large sheet of emery cloth, and a perfectly flat, smooth, hard surface.

After all the piston grooves are thoroughly cleaned of carbon, the next step is to fit each ring to a certain groove. To fit a ring to its groove it is not necessary to spring it over the piston, as the outside edge of the ring is just as good as the inner edge to test its fit in the groove. The ring is placed in the groove to which it is to be fitted and turned all around its circumference. It ought to be a fair fit, free enough to move easily around the piston, but not loose enough so that there is any appreciable up and down motion. If the ring is found to fit tight, it is laid edge down on the piece of emery cloth, which has been placed on the flat surface mentioned above, and it is then carefully rubbed down until its width is such that it fits correctly into the groove it is to occupy. It is advisable to fit each ring to a certain groove and then mark it so as to be sure that it will be placed in this groove when finally assembled.

When all the rings have been fitted to their grooves the next thing to do is to fit them to the cylinders. The ring is pushed into the cylinder a couple of inches, keeping its edge parallel with the lower edge of the cylinder. Should the ring be slightly larger than the cylinder bore, this fact will be shown by the angular slots of the ring being out of line or by difficulty in inserting if it is of the lap-joint type. This condition is remedied by placing the ring in the vise between the soft-metal jaw clips and carefully removing with a fine file sufficient metal from the ends of the ring at the slot until a slight space exists between the ends when the ring is placed in the cylinder. The reason for leaving this space is that the heat of the cylinder expands the ring lengthwise and, if this space is not left, the expansion may cause the ends to touch and the ring will jam in the cylinder.

Having fitted all of the rings in both of these ways, the final step is to fit them so that they make good contact around the circumference, where they rub against the cylinder walls. Probably the best way of doing this is to have a block of wood, like a plug, turned to an easy fit in the cylinder, with one end turned down so as to form a shoulder. This turned-down end is made slightly smaller than the inside diameter of the ring to be fitted when fully closed and the width of the turned-off portion is a very little less than the width of the ring. The ring is slipped over the end of this plug and held there by a batten fastened in the center of the plug by a screw. The inside of the cylinder is now smeared evenly with a thin coating of blue pigment and the ring is pushed back and forth in the cylinder, the shoulder on the wooden plug holding it square. The high spots will be denoted by the bright color. These high spots are removed by the careful use of a fine file or a piece of emery cloth. The ring is again inserted in the cylinder and the operation repeated until a uniform coating of blue denotes that a fairly good fit has been obtained. This is the process with each ring in its own cylinder.

Extra care is needed in putting new rings on a piston, as they are more brittle than old ones. They are put on by a reversal of the process explained for removing them; that is, by means of the three thin strips of metal. Before inserting in the cylinder, be sure that the slots in the rings are spaced equidistant around the piston, as this assists in the prevention of gas leakage. The cylinder walls should be well coated with oil before inserting the piston.

It will probably be found that the compression is not as good just after installing new rings as was the case with the old ones. However, about one hundred miles of careful running of the car with plenty of oil in the crankcase should remedy this, as the rings by that time will have become worn to a perfect fit. The compression will be found greatly improved.

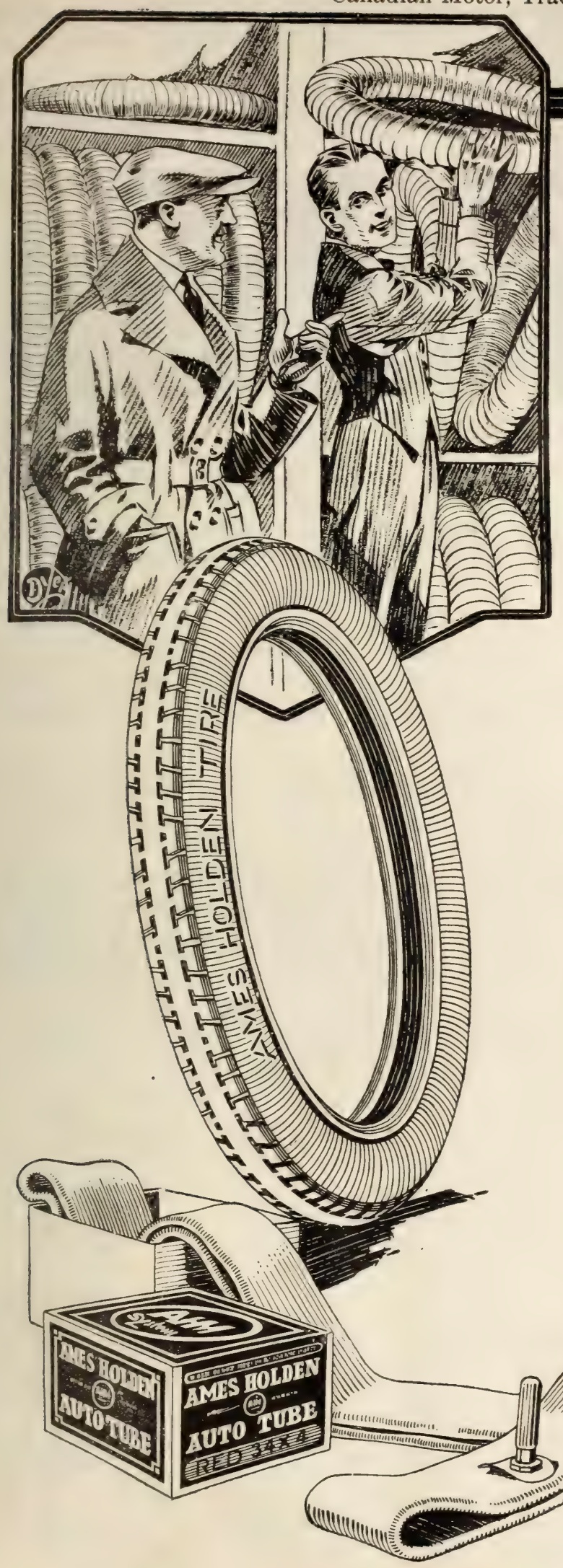
HANDY TORCH LIGHTER

STRIKING matches in the repair shop is both unsatisfactory and dangerous. When a light is needed to ignite a welding torch some welders use a small alcohol burner, which is kept burning at all times; some have mechanical lighters and others mount a small pilot light on acetylene tanks from which all pressure gas has been used. There is still another method of lighting, namely, electrical, which welders generally consider the most satisfactory, economical and the safest. The necessary equipment comprises a battery connected through a push button to an old ignition secondary coil; the secondary leads of which are connected in turn to a spark gap mounted in any convenient place adjacent to the push button. In some instances this equipment is mounted on the welding truck, and in others on the side of the welding bench.

KEHAWKE TIRE SPREADER

THIS device, the makers say, will spread any tire in 30 seconds. It has ten claws, which grip the tire, as shown in the illustration, and hold it securely until it is inspected and the repairs made. It is said to be of special advantage in relining casings. The machine rotates at will and the claws are operated by a wheel. It is manufactured by the Kehawke Manufacturing Co., 1006 West Lake street, Minneapolis, Minn.

Kehawke Tire Spreader



AHM System

Here Are "Auto Shoes"

Any automobile casing has a right to be called a "tire"—the good, the bad, the indifferent.

The word "tire" contains nothing to indicate the origin of the casing, its character, value, mileage or reliability.

Ample reasons why we should desire a distinctive name for casings—built to give much greater than average mileage—Ames Holden "Auto Shoes."

A name which will distinguish them from the hosts of ordinary tires—indicate their superiority—identify them immediately as "the casings that give the cheapest mileage" — Ames Holden "Auto Shoes."

The policy behind Ames Holden "Auto Shoes" is as distinctive as the name—a policy that considers the dealer very largely—that aims at pleasant relationship and goodwill, free from irritating rules and red tape.

The reputation for excessive mileage established by Ames Holden "Auto Shoes" is being talked of everywhere. Sales and distribution are increasing rapidly. We have a good proposition to make to you for your territory—a proposition you will be glad to consider and act upon. Write.

AMES HOLDEN "AUTO SHOES"

CORD AND FABRIC TIRES IN ALL STANDARD SIZES

AMES HOLDEN

Gray and Red Tubes are built to add to the mileage given by "Auto Shoes"

MANUFACTURED BY

AMES HOLDEN McCREADY LIMITED

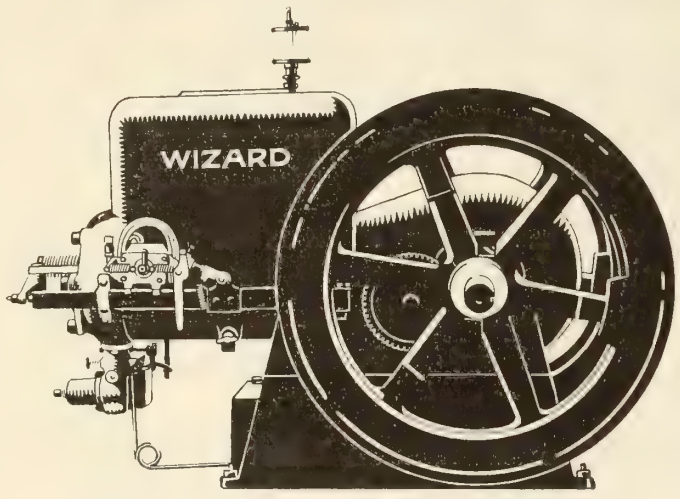
Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, London, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver

Make 1921 a Year of Record Profits by Handling

GILSON PRODUCTS

"Goes Like Sixty" 100% Service

QUOTE THE LOWEST PRICES ON ENGINES

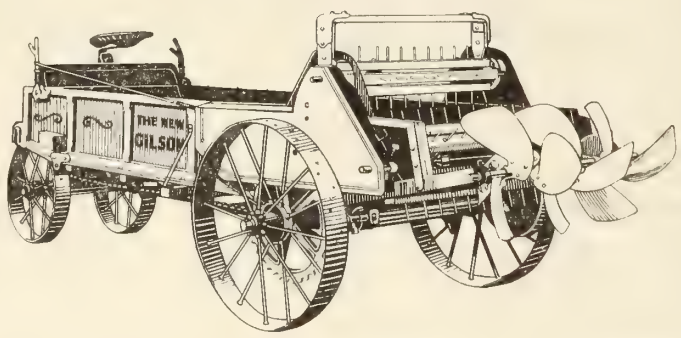


Nine times out of ten it's *price* that makes or breaks a sale. With our new "Wizard" line you can quote prices not heard of since pre-war days—lower than any other engine on the market.

And you can sell an engine as good as the best. A size for every need — 1¾, 3½, 6 and 10 H. P. Big surplus power over rating—like all Gilson engines. Backed by a five-year guarantee. Throttle governed. Built-in magneto. All run on cheap kerosene.

You can offer FREE TRIAL and EASY TERMS

Get the Cream of the business by writing for full facts on this engine to-day



The New Gilson Manure Spreader With Wide Spreading Propeller

With new selling features for 1921

The envy of the implement trade—for its exclusive service and selling features and its firm-rooted popularity.

Our New Wide Spreading Propeller makes the Gilson the widest spreading machine made. The propellers break up the manure into small particles and spread it evenly the full width.

The Gilson is low down, has light draught—and is equipped with an improved two and three-horse hitch, which eliminates all side draught. It is extremely simple and free from all complicated parts and expensive repairs.

The New Gilson Spreader is a big money-maker for the live dealer. The Gilson agent is assured of the bulk of the Spreader business in his territory. Why not handle it yourself?

NOW--A GILSON VALUE IN CREAM SEPARATORS

Built in Sweden—Finest Quality Material, Highest Grade Workmanship—Many Noteworthy Improvements.

Here's the Separator "with all trouble left out," the Separator built to make profits for the owner, and the agent who sells it.

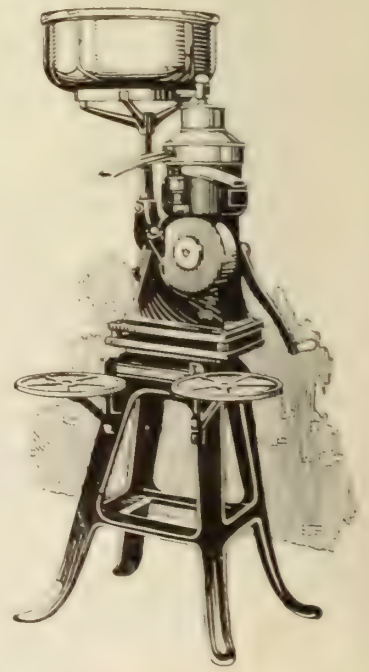
The bowl balances and aligns itself by gyroscopic motion. 90% of the weight is hung below the top of the spindle.

Fewer discs than any other separator on the market.

All discs are interchangeable.

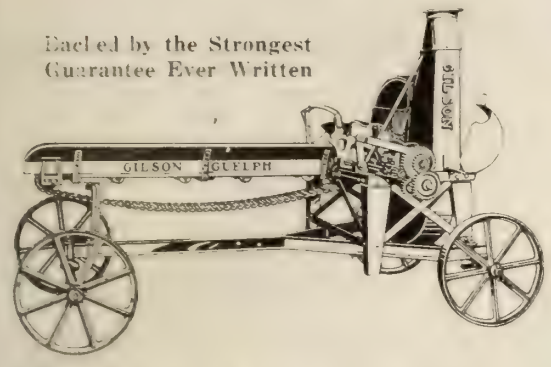
A sturdy outfit — light-running, close-skimming — backed by a world-wide reputation and a real guarantee.

It means dollars to you to handle Gilson Cream Separators. Get our proposition to-day!



GILSON MFG. COMPANY

Line Up With the GILSON LINE for 1921 Income



"The Wonderful Gilson" KING OF SILO FILLERS

With New Patented Self-Feeding Device

Enjoys the largest sale of any silo filler under the British Flag. Guaranteed to cut and elevate more ensilage with the same power than any other blower cutter. No matter what lines you are handling you cannot afford to pass up the Gilson Silo Filler. Pays handsome profits — sells more readily than any other silo filler — are in every community to back up your sales talk —the best advertised line on the market. Fill in the coupon and mail TO-DAY.

HYLO SYLO

THE HIGHEST QUALITY JOB ON THE MARKET

This year Gilson dealers will make thousands of dollars selling HYLO SYLOS.

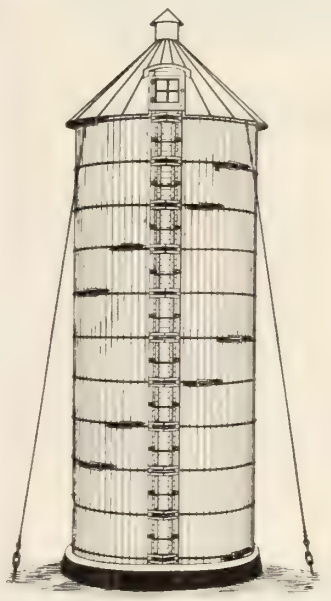
The HYLO SYLO puts the Gilson dealer in the strongest position of any silo agent.

The HYLO SYLO price is as low as the lowest—and its value is as high as the highest.

It is made of either the well-known Long Leaf Yellow Pine or of hardy Northern-grown Canadian lumber. The latter is treated in special preservatives. Both are exactly the same in construction.

Patented features, such as our self-adjusting hoops, help you shut out competition completely.

Learn how you can double your profits.



We are headquarters for

Threshers
Tractors
Wood-Saws
Grain Grinders
Pump Jacks
Belting, etc.

Get our prices on these lines

NOW—A COMPLETE GILSON LINE OF PATENTED BARN EQUIPMENT

It's the first place an up-to-date farmer thinks of putting in shape — the stable. That's why a live agent can make real money selling stable equipment.

The Gilson "West Bend" line has features no other lines can offer. For instance, every stanchion from two to fifty stalls can be locked or opened at one and the same time, with a twist of the wrist.

It's a feature every farmer wants when he learns of it. And Gilson advertising is taking care of that!

Our line includes stanchions, stalls, litter carriers, water buckets, etc. Get catalogue, full facts and agent's proposition. Be sure to figure on this line for your 1921 income.

Plan Now to Make More Money

Many of the most successful dealers in the country are Gilson dealers. They make money because they have good goods to sell—because they are backed by good service—and because Gilson deals with them liberally and fairly. You can't begin the New Year better than by taking on Gilson lines. Fill in the coupon. Mail it TO-DAY.

LIMITED **York Street, GUELPH, ONT.**
Elgin Ave., WINNIPEG, MAN.

Gilson Mfg. Co., Limited,
Guelph, Ont.

Please send full particulars and agent's proposition on your

Engines
Spreaders
Cream Separators
Silo Fillers
Hylo Sylos
Stable Equipment
Threshers
Tractors
Wood-Saws
Grain Grinders
Pump Jacks

Put a cross (x) alongside the line that interests you.

Name .....

Address .....

.....

.....

Beatty Bros. Limited Bulletin

BT Equipment Is Profitable

No matter where your territory may be, no matter what season of the year—there is some item in the line of BT Barn Equipment that you can handle profitably.

BT Steel Cow Stalls are sold all fall, winter and spring. BT Manure Carriers and Water Bowls are splendidly profitable lines in the fall and winter. During the summer and early fall, BT Hay Carriers sell on every territory.

There are no second-hand goods to bother with in selling BT Barn Equipment. There are no bad debts. There is no "service" expense. But there is a good margin of profit for the BT dealer, a well-advertised and thoroughly reliable line and plenty of help in selling.

Mr. C. H. Bernath, of Harriston, who has made a splendid success with BT Equipment, by knowledge of the goods, backed up by careful canvassing.

An Enterprising Dealer

As an instance of what can be done on an ordinary, everyday territory, take the case of Mr. C. H. Bernath, of Harriston, Ont. Mr. Bernath sold in one year 107 BT Steel Stalls and Stanchions, 6 Manure Carrier Outfits, 110 BT Water Bowls with pipe and fittings, and 6 Hay Carrier Outfits. When asked for the reason of his success, Mr. Bernath replied: "I attribute my success to an intimate and accurate knowledge of the goods, combined with a consistent, constant and thorough canvass of the territory."

Sell Barn Equipment Now

Mr. Bernath's record could easily be equalled by you—and you would get the profits that result.

If you have the BT agency—push this line now. It is a splendid way of making profits out of "dull months."

If you have not the BT agency, write us. We still have openings for good agents.

There is no better time than the winter to sell Barn Equipment. The farmer is planning that new barn or other improvements and is ready to consider your canvass and place the order.

BEATTY BROS., Limited

St. John, N.B. Fergus, Ont. Winnipeg
Montreal London, Ont. Edmonton
Vancouver London, Eng.

Dairy *and* Household Supplies

NEW WASHER

THE Wayne Manufacturing Co., of St. Louis, Mo., have recently put on the market an electrically-driven, rocker-type washing machine. The Wayne washer, the makers claim, is absolutely fool-proof, and very simple in construction. There are but seventeen moving parts. All the bearings are oilless and the dirty oil-can is done away with; by this means the danger

New Wayne Washer

of neglect and consequent scarred and cut bearings—and the attendant general break-down of the machine—are eliminated. The copper or galvanized tub is not fastened to the machine by any bolts or rivets, but merely rests in the rocker cradle. Because of the fact that the tub can be easily removed, the machine is wonderfully sanitary, as by removing the tub the entire mechanism inside the cabinet can be easily and quickly cleaned.

In construction, the makers claim, the Wayne Rocker is as strong as it is possible to make it. The frame is of channel and angle steel, welded, not bolted. The panels are of sheet steel and japanned. The tub is of copper, heavily tinned on the inside. The wringer is the best obtainable and has all the features of simple control, swinging to various positions; is reversible and is equipped with a quick release device.

A HINT IN SELLING LIGHT PLANTS

HERE is something to think about in connection with selling electric light plants: Oftentimes there is a better chance to make a sale if a delivery at a future date is arranged for. Applied to light plants, try selling them now with delivery in 60 to 90 days specified, or after farmers receive the money from their crops.

Undoubtedly a great many sales can be made by including this proviso that could not otherwise be landed. Furthermore, it will give the farmer sufficient time to have his house and farm buildings wired—which is decidedly a job for an electrician—before the plant is delivered and installed.

It also makes possible a larger business on a given investment, and facilitates deliveries on schedule time.

Perhaps the best way to form an accurate idea of the demand for electric lighting plants is to drive out in the country and take note of the number of houses which are not equipped with them. An inspection will convince the dealer that many owners of these homes are excellent prospects for lighting plants. The fact of the matter is, electricity is as necessary in the country as in towns and cities. The need of better lights in rural districts has claimed the attention of farmers, and those interested in the farmers' welfare, for several years. Manufacturers of lighting plants are continually receiving inquiries regarding their product, showing that many prospective customers for lighting plants are scattered throughout the country.

In the average rural community there are enough farmers ready and willing to buy electric lighting plants to give momentum to the dealer's sales. He will gradually add new names to his list of prospective customers, and through the sheer merit of the plants he sells build up a profitable business.

SPEED OF THE SEPARATOR

THE speed at which the cream separator is operated is a matter of importance. If the bowl does not travel at the proper rate of speed, inefficient skimming will be the result, too much butterfat being left in the skimmilk. A decrease in the speed of the machine will cause a decrease in the fat test of the cream, while running the machine too fast will cause an increase. Care should be taken to operate the separator at the speed designated by the manufacturer. To be sure that the machine is being run at the correct speed, the revolutions of the crank should be timed by a reliable indicator or a watch.—Farm Life.

NEW EMPIRE DISTRIBUTORS

THE People's Manufacturing and Sales Company, Limited, Ottawa, has been incorporated in Ontario with an authorized capital of $300,000. The company has exclusive sales rights in Ontario, from January 1, 1921, of the Empire cream separator, Empire milking machine and Empire gas engine.

The president of the new company is W. J. Hemphill, of Ottawa, who has been connected with the Empire Cream Separator Company, for 17 years. The directors are: Erle S. West, Ottawa; (Mr. West has been with the Empire people for ten years) Samuel G. Gourlay, Ottawa; Thomas Lawrason, London, Ont.; Lafayette Mansfield, Muncie, Indiana.

Stock in the new concern is being sold largely to implement dealers and farmers of Ontario.

SASKATCHEWAN FARM IMPLEMENT ACT

TWO new provisions have been added to the Saskatchewan Farm Implement Act. The first provides a penalty of $100 for each offence, where a vendor fails to maintain a sufficient supply of repairs required for machines sold by him and in operation in the province; and the second authorizes the Minister of Agriculture to appoint inspectors, whose duties shall be to inspect the stocks of repairs kept by vendors and who shall have free access during business hours to the vendors' premises.

Prosperous farmers are your best customers. De Laval Separators and De Laval Milkers bring prosperity to the farmers who use them.

Now is the time to see about the De Laval Contract. Perhaps we need a separator or milker agency in your town. If you think we do send your application to nearest office.

THE DE LAVAL COMPANY, Limited

MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

50,000 Branches and Local Agencies the World Over

Sooner or later you will sell the

De Laval

Cream Separator or Milker

Automotive Accessories *and* Implement Equipment

CLIMAX COMPRESSION TUBES

THE Climax compression inner tube for automobile tires is a new form of self-sealing tube. Shaping the rubber to such a cross section that air pressure within compresses its walls, instead of expanding them, is the principle employed.

Owing to the tube having sufficient body to hold its shape when deflated so that it can only be placed in the casing in the proper manner, the makers claim that the danger of pinching is overcome. In the surface of the tube are nearly 700 shallow circular depressions, ¾ in. in diameter, made by a special mold, adding about 30 per cent. to the actual rubber surface. The inflation forces the depressions out against the casing, so compressing the rubber that any ordinary puncture is automatically closed. The pressure of the small pockets, or depressions, against the lining of the casing when the tube is fully inflated prevents the tube from creeping from its proper location.

The manufacturers are the Climax Rubber Co., 21 West Gay street, Columbus, Ohio.

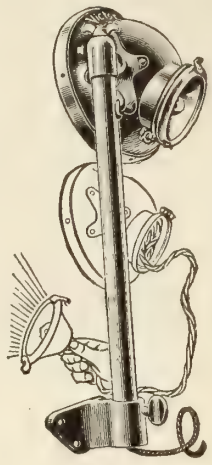
IGNI-TEST, TROUBLE FINDER AND IGNITION TESTER

IGNI-TEST is a thoroughly practical ignition testing outfit, which permits quick location of all ignition troubles without the need of removing the magneto or coil from the car. Spark plugs, condensers and insulation tests may also be made. The makers say it contains no delicate meters or mechanism to burn out or get out of order, and cannot be injured through a wrong connection. The instrument case is made of birch, mahogany finish with ebony finish instrument board. The working parts are made of steel with all steel and iron parts Parkerized to prevent rust. The interrupter is fitted with platinum iridium contact points, and it is mechanically operated by a small troubleproof electric motor. Included with each outfit is a special attachment for testing Ford coil units, connecting cable, and an instruction book with detailed drawings and information on "How to Test All Types of Magnetos and Spark Coils."

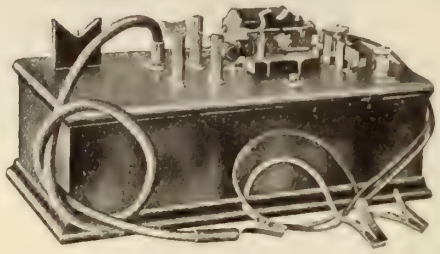
Igni-Test is manufactured by the Testall Electric Mfg. Co. of San Antonia, Texas. W. J. Jeffree & Co., Vancouver, B.C., are the Canadian distributors.

APCO TRANSMISSION TOOL

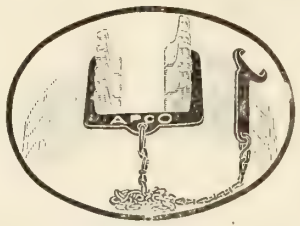
THIS tool has been designed to eliminate the difficulty of holding the transmission bands together while assembling. The clamp shown in the cut holds the bands in perfect alignment and it is put on instantly. The wrench is drop forged, milled to the exact size of the adjustment nuts and the chain eliminates the chance of losing the wrench in the transmission case. The whole tool is finished in black enamel. It is made by the Apco Mfg. Co., Providence, U.S.A.



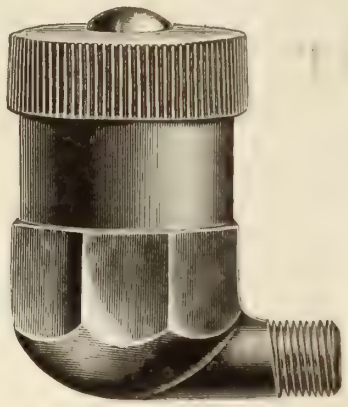
Victor Tractor Lamp



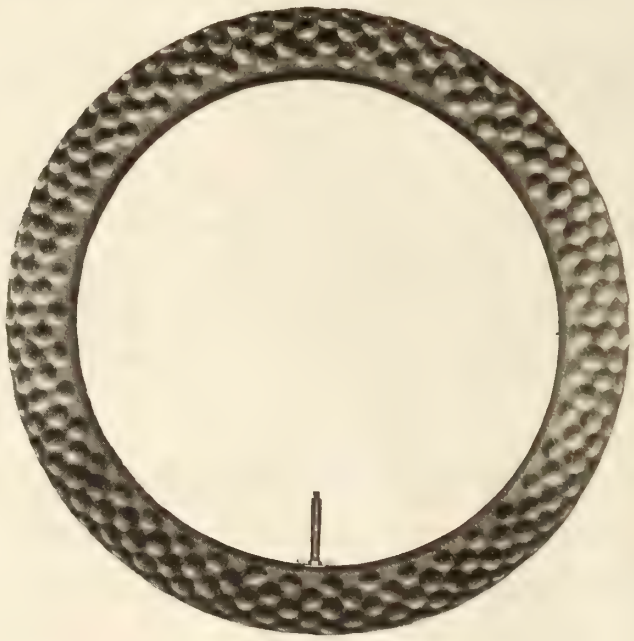
Igni-Test Set



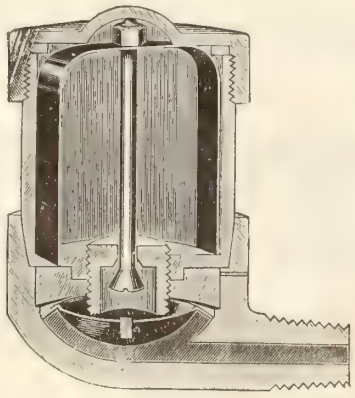
Apco Transmission Tool



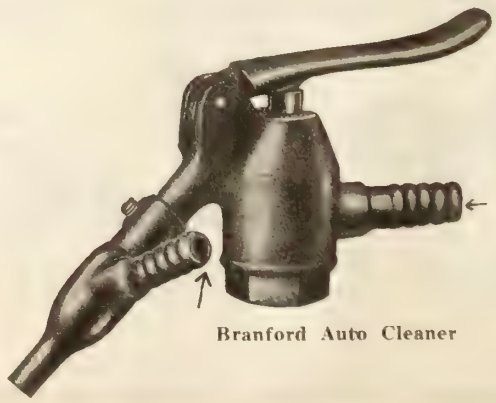
Vanoiler



Climax Compression Tube



Vanoiler



Branford Auto Cleaner

TRACTOR LAMP

THE Victor lamp is especially designed for tractor service. The reflector is so constructed that it casts a broad, white light ahead, making it as easy to plow, cultivate, and conduct other farm operations after nightfall as in broad day. Attached to the rear of the lamp is a smaller auxiliary light. This secondary lamp is provided with an extension cord, making it possible to detach and use it for oiling and necessary inspection of the machine. When in its customary position this rear light throws a beam backwards on to the implements being hauled.

Another feature claimed for this device is its sturdy construction. It is solidly built for the rough travelling incident to tractor service and adjustable to any angle desired. The lamp can be attached to the fender or the frame. It is manufactured by the Corcoran-Victor Co., Cincinnati, U.S.

THE VANOILER

THE Vanoiler is an automatic lubricating oil cup which may be placed at any point on the automobile where oil lubrication is desired. Externally the device resembles the average oil and grease cup in that it has a screw cap and a ⅛ inch pipe fitting for attachment to the machine, say the makers, but internally, the construction is entirely new and novel. The oil cup proper, or the storage reservoir occupies the main chamber and is large enough to contain approximately two ounces of lubricant. This chamber is fitted at the bottom with a taper valve and an adjustable seat. The seat may be turned in the housing to admit more or less oil to the bottom of the chamber as desired; depending, of course, upon the part to be supplied.

Beneath the main chamber is placed a catch-basin and this member is so designed that when it is full of oil it forms a seal to the valve in the bottom of the main reservoir. In short, under normal conditions this lower basin will fill with oil from the main reservoir and then the oil will cease to flow.

The jarring motion and vibration of the car, when running, tends to work the oil so that it spills out of the basin into the lower part of the oil cup, from there the oil naturally works to the bearing, if the passage is clear.

As soon as the oil level in the basin drops, more oil flows into it from the main reservoir and the action continues. As long as the car is functioning, the parts are supplied with oil, but as soon as the car stops the oil ceases to flow, thus conserving the supply and insuring maximum efficiency. It is manufactured by the Advanced Products Corporation, Philadelphia, Pa.

BRANFORD AUTO CLEANER

THIS is a nozzle, operating on the principle of an atomizer. It sprays water, cleaning fluid or paint with any air pressure above 20 lb. It can also be used without liquid to clean upholstery. The flow of air is controlled by a quick-acting valve on the nozzle. It is manufactured by the Malleable Iron Fittings Co., Branford, Conn.

Look For The
EAGLE
Our Trade Mark

CASE ON TOP SINCE 1842

Opens the Road to Success

DEALERS who are awake to the sale and good-will value of honestly built power farming machinery with a reputation for satisfaction over a period of 79 years, contract for the sale of Case machinery as their principal line for 1921.

Every farmer who is cultivating a profitable acreage is a propect for a Case tractor. Most farmers who now have a tractor are prospects for a Case galvanized steel-built thresher, hay baler, silo filler, Grand Detour plow or tandem disc harrow.

Every thresherman who needs a new outfit is a live prospect for a Case steam or kerosene tractor and threshing machine.

State Highway Departments, County Commissioners, Street Committees of Municipalities, and Road Building Contractors are potential purchasers of Case tractors (either kerosene or steam), road graders, rock crushers or steam rollers. Case prospects are everywhere.

Case sales run into big money, and every Case sale lays the foundation for future Case sales. If you are a dealer who believes in service to the purchaser, not only for the profit that's in it, but also for the sake of service, we suggest you investigate the Case way that will open your road to success.

J. I. Case Threshing Machine Company
Dept. A215 RACINE, WISCONSIN

CASE
TRADE MARKS REG U.S. PAT. OFF. AND IN FOREIGN COUNTRIES
KEROSENE TRACTORS

"NOTICE: We want the public to know that our plows and harrows are not the Case Plows and harrows made by the J. I. Case Plow Works Co."

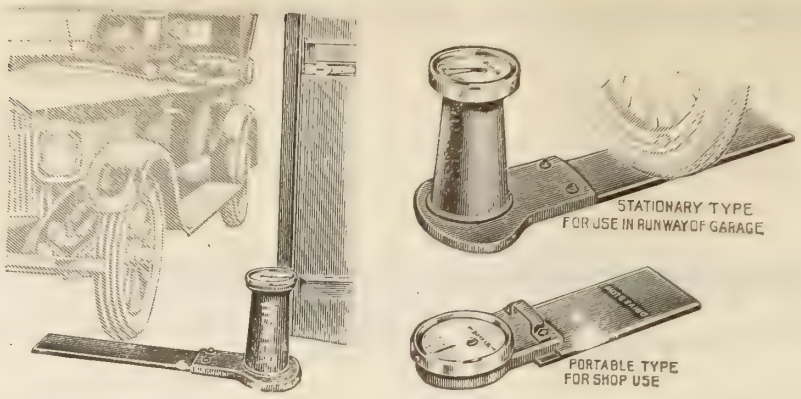
ALIGNMENT INDICATOR

THE Weaver wheel alignment indicator is designed for accurately measuring side thrust of automobile wheels.

The indicator is extremely simple in operation. To measure the alignment of either front or rear wheels, simply drive one of the wheels in question over the roller-bearing plate. Hands on the dial indicate to the fraction of an inch how much the wheels are toed in or out. It comes in two sizes. The large size is for use in the runway of the garage, where all cars entering will pass over it. It is equipped with an electric bell, which will ring if the wheels are out of alignment a quarter of an inch or more, calling the attention of the car owner and garage man to the necessity of having the wheels properly aligned. The small size indicator, the makers say, is invaluable to the mechanic in the shop, in getting wheels properly aligned, since it can be easily carried wherever desired.

It consists primarily of two plates, the upper of which moves over the lower on two sets of rollers as the wheel passes over it. The movement of the plate actuates a lever connected with the master hand on the dial which operates two similar hands, one of which moving to the left registers how much the wheels are toed in, the other moving to the right indicating how much the wheels are toed out. The hands remain stationary in the position deposited by the master hand until the reading is taken, when they are returned to zero by pressing a lever at the side of the dial. The top plate and rollers are automatically brought back to their original position, as soon as the wheel passes off the plate. The two metal strips carrying the rollers can be removed for cleaning. On the dial is a separate scale for each size tire from thirty to forty-two inches, insuring the correct measurement of tires of all sizes.

The top and bottom plates are of polished steel running on cold rolled steel rollers. The main frame casting is of grey iron. It is made by the Weaver Mfg. Company.



Weaver Alignment Indicator

Lockwood Open-With-Door Side Curtains

SMALL BATTERY CHARGING RHEOSTAT

THIS is a small rheostat for use in charging automobile batteries from a 32-volt farm light plant. The rheostat is connected in one of the lines from the 32-volt generating set and in series with the battery to be charged. A dial plate underneath the operating handle is marked to indicate the proper setting for charging certain numbers of cells. The handle is moved until the arrow is at the proper point on the dial plate, after which the battery circuit is closed, and the charge begins. For example, when the line on the rotating dial between the lettering "6 cells, 12 volts" is in line with the arrow on the name plate, and the circuit closed, charging will begin. For 3 cells, 6 volts, further turning of the knob brings the corresponding line to the arrow point. An ammeter to measure the charging current is not necessary, as the current will be of the proper value (approximately 5 amperes), when the handle is in the right position as indicated on the dial. The dial may be provided with marks for batteries consisting of 3, 6, 9 and 12 cells.

The rheostat is very small and compact, being about 6 inches in diameter, and is readily mounted on any flat surface, such as a switchboard or wall, by means of three screws or bolts. The resistor wire is reflexed to provide for expansion and is fastened to a special base of molded insulating material, which, the makers say, will withstand a high heat without cracking or chipping. The entire structure is then covered with a special cement and sprinkled with sand, which acts as a binding agent. This gives the rheostat a waterproof construction so it may be used satisfactorily in moisture-laden places such as basements. The front of the rheostat is entirely enclosed in a well ventilated pressed steel frame. The operating knob is of molded insulating material.

It is made by the Cutler-Hammer Mfg. Co. and sold to the Canadian trade by the Northern Electric Company.

TWO SPINDLE DRILL

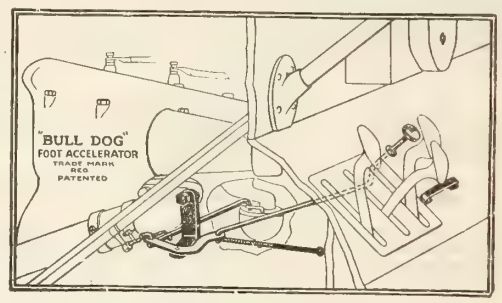
THE Black & Decker Mfg. Co. has recently designed a two-spindle drill, specifically adapted for drilling holes necessary for the Murphy top fastener. This fastener is used for attaching automobile side curtains and when the base of the fastener is put on the automobile body, two holes ⅞ inch apart are necessary. This new machine drills these two holes the correct distance apart in the same operation.

The handle of the drill is like an automatic pistol and a pull on the trigger sets the two drill bits in motion. A second pull stops the drill and in this way the operator can control the tool without changing the position of either hand. The motor and the gear construction necessary for driving the two spindles is simple, but rugged. The gears themselves are of the finest grade steel, heat treated. The two spindles have specially designed chucks to hold the two ⅛ inch drill bits.

The tool is exceptionally light and by holding it in the natural way with the forefinger on the trigger the operator is able to drill two holes at the same time ⅛ inch in diameter and ⅞ inch apart.

FOOT ACCELERATOR

THE "Bull Dog" foot accelerator, manufactured by the W. H. Thomas Mfg. Company, is designed to fit all Ford models. The makers say the accelerator gives a complete and satisfactory control under all conditions. It is simple in construction, easily installed, does not interfere with the hand throttle or with the removal of the floor boards. All parts are made of steel and are heavily japanned in black.

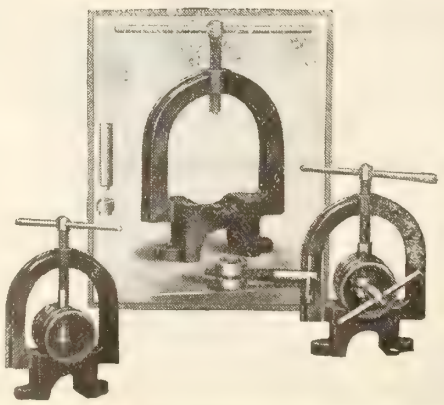


"Bull Dog" Foot Accelerator

Small Battery Charging Rheostat

OPEN-WITH-DOOR SIDE CURTAINS

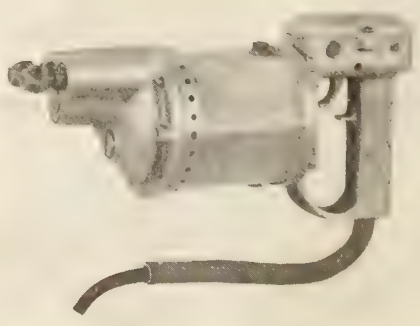
LOCKWOOD winter side curtains are designed for Ford cars. The curtains open with the doors like those on a Sedan, coupe or limousine. Special metal clips hold the front curtains snugly to the windshield, thereby excluding drafts. Weather strips extending from the side quarters of the top to the top of the doors exclude the cold drafts, which ordinarily blow in between the curtains. The curtains are held firmly in place by special door irons. These door irons, the makers say, are easy to install or remove. Flaps at the bottom of the curtains over the doors permit easy access to the door handles or door catches. Celluloid windows in the side curtains allow plenty of light. The Lockwood winter side curtains are made up in two different weights of auto rubber. They are manufactured by the Lockwood Mfg. Company.



Bushing Press

STEVENS PISTON BUSHING PRESS

A PISTON bushing press has been added to the Stevens line of garage equipment. One of the chief features of the bushing press is the expanding block which is placed between the piston pin bosses, thus giving a firm support while the pin is being forced out. A plunger and punch align and insert the bushings accurately and smoothly. Essentially the device consists of the expanding block, the base, yoke and the T-handle screw. It is manufactured by Stevens and Company.



B. and D. Two-Spindle Drill

THE ONLY PERFECT PISTON RING

EXCELLENCE TWO-PIECE PISTON RINGS

NEVER BREAKS WHEN PUTTING ON

Keeping the Gas on the Job

That's the work ExcellencE Two-Piece Piston Rings are designed to do —to make certain that every bit of gas exerts its full force on the piston head.

ExcellencE Rings expand both ways. They always fit snugly against the walls of the cylinder—no gas can get by, and only sufficient oil for perfect lubrication.

Many garage and repair men have found it good business to put in ExcellencE Rings when overhauling a car even when new rings are not specified. It's a bit of extra service that makes the car more efficient and powerful and the owner more firmly convinced of your ability.

ExcellencE Rings can now be supplied for all cars taking the following sizes—3¾ x ¼, 3¾ x 3-16 and 3 11-16 x 3-16, 3¾ + 005 x ¼, 3¾ + 010 x ¼, 3¾ + 031 x ¾, 3½ x 3-16, 3⅜ x 3-16, 3¼ x 3-16. Other sizes will be available soon.

LAMONTAGNE LIMITED

Wholesale Dealers in Automotive Equipment

QUEBEC MONTREAL WINNIPEG

Protection Against HOLD-UPS

THERE is one kind of "Hold-up" especially to be guarded against, for it causes loss of valuable time and temper—**being caught short on the road with some repair** without a

"HEXALL" Socket Wrench Set

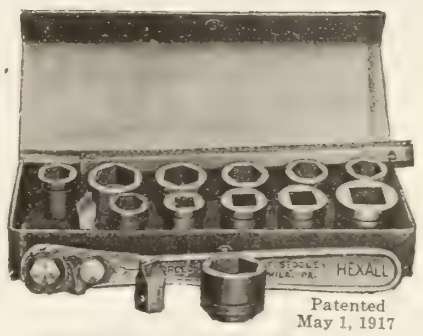
Trade Mark Reg. U. S. Patent Office

Careful drivers always make certain that a "HEXALL" Set is in their tool-kits before they start. Then, if trouble comes, "HEXALL" gets in action with speed, precision and dependability.

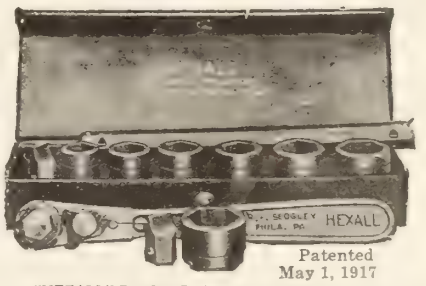
The "HEXALL" Socket Wrenches illustrated are favorites with motorists everywhere. Get your trade familiar with them; display them on your shelves and in your cases. There are four other sets—**a "HEXALL" for every need.** This guarantee goes with every sale:—

"Break Any Sedgley Wrench and We Repair It--No Charge"

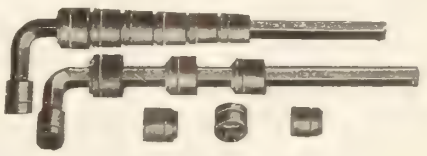
The same motorist who insures protection against a "hold-up" on the road with a "HEXALL" Set, also buys protection against another kind of road "hold-up" — the highwayman. Here is guaranteed protection in the form of the **"BABY"** Hammerless Revolver. The smallest, practical revolver on the market — just as deadly a weapon as its big brothers. Measures only 4 inches over all, weighs but 6 oz. and shoots 6, rapid, rimfire cartridges, .22 calibre. SAFE **because it fires only when the trigger is pulled all the way back.**



Patented May 1, 1917
"HEXALL" Ratchet Socket Wrench No. 1—16 pcs.



Patented May 1, 1917
"HEXALL" Ratchet Socket Wrench No. 2—11 pcs.



Patented Dec. 31, 1918
"HEXALL" Socket Wrench No. 5—8 pcs.

The "BABY"

R. F. SEDGLEY, Inc. Est. 1897

2311-13-15 North 16th St., PHILADELPHIA, PA.

Canadian Distributors: Lamontagne, Limited, Montreal, Canada.
Harold F. Watson Co., Sole Agent, 208 Coristine Building, Montreal, Canada.

BULL DOG BEARING PROTECTION

THIS is a new device on the market designed to prevent dirt, sand, mud, water and all foreign substances from entering the hub and allow the bearings to run in a lubricant. It fits all Ford cars and trucks, as well as the Chevrolet "490."

It is manufactured by the W. H. Thomas Mfg. Company.

SPRAGUE WORM STEERING GEAR FOR FORD CARS

THE new model "M" Sprague worm steering gear for Ford cars is about to be placed on the market by the Sprague Tire & Rubber Co., Omaha, Neb.

This gear is said to be the only one of its kind manufactured for Fords. With this gear it is claimed that a Ford car can be driven with one hand over rough roads, eliminating strain and vibration and giving driver control of the car at all times. There is said to be no locking over centre, and front wheels respond to movement of steering wheel.

Internal springs at each end of drag link take up shock and vibration and a strong spider gear enables steering wheel and shaft to turn evenly.

The gear can be installed in car in about one hour without drilling holes or cutting connecting or timer rod.

ADJUSTABLE MOTOR STAND

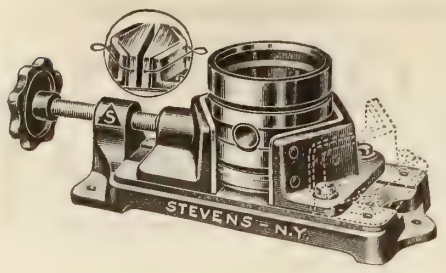
THE Carswell-Hammond Mfg. Company have placed on the market a new motor stand for all types of motors. It is adjustable from 0 to 33 inches in width. Two one inch pipes slide inside of two 1¼ inch pipes as shown in the illustration. A long lead screw with a double four thread quickly adjusts the stand to any width desired, this being operated by a crank at the lower part of the stand. A worm gear and pinion turns the motor to any desired position, making it easy for one man to operate it. When adjusting the stand for width by the lower crank an improved cross support adjusts itself. This is done by one pipe sliding into a larger one, thus doing away with bolts, etc. The stand is portable and adjustable to any width.

BOSCH SPARK PLUG

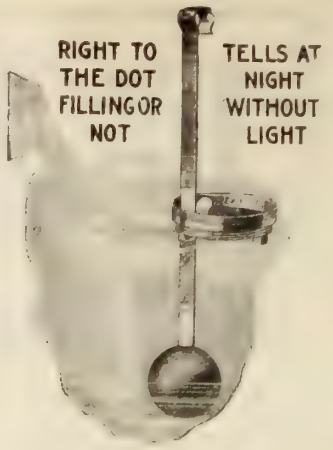
THE Bosch plug consists of but three principal parts: a heavy central electrode, a large single insulator, and a big strong steel shell—all built together into a single rugged unit. The makers say it eliminates the threaded joints commonly found in other plugs, provides great strength, and absolutely prevents leakage of compression or power.

The insulator is made of "Ambosite," an artificial stone, which is almost unbreakable, and is superior to porcelain, glass or mica. It is claimed a slip of the wrench will not break it; excessive vibration or intense heat will not crack it; high electric voltage cannot puncture it. The three electrodes of the Bosch plug are of nickel alloy and rigid enough to prevent variation of the spark gap under compression. Constant adjustments are not necessary. The knife edges of the electrodes cause the burning off of any oil that may get to them, and they present the least possible electrical resistance, insuring a good spark at very low engine speeds. The crescent shape of the electrodes causes the spark to pass in the form of a sheet of flame, rather than a fine spark, igniting more mixture particles and increasing the engine efficiency.

Another important feature is the recess in the insulator around the lower end of the central electrode. This provides two insulating air spaces (one outside, and the other inside the insulator) reducing to a minimum the possibility of the plug short-circuiting through fouling or over-oiling. It is made by the American Bosch Magneto Corporation.

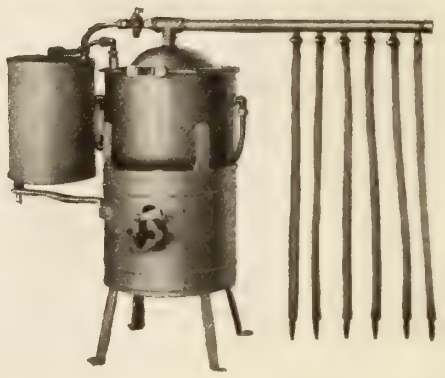


Stevens Piston Vise

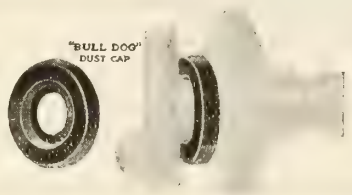


Apex Gasoline Gauge

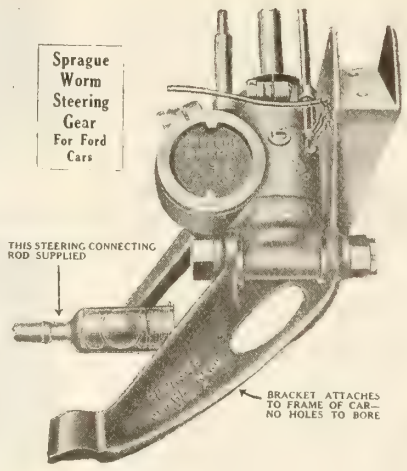
Bosch Spark Plug



Battery Steamer and Still



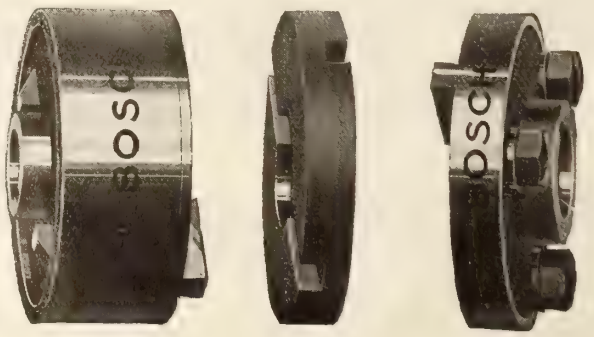
"Bull Dog" Dust Cap


Sprague Worm Steering Gear For Ford Cars
THIS STEERING CONNECTING ROD SUPPLIED
BRACKET ATTACHES TO FRAME OF CAR—NO HOLES TO BORE

Worm Steering Gear

Carswell-Hammond Motor Stand

Bosch Impulse Coupling



Bosch Impulse Coupling Partly Disassembled

UNIVERSAL PISTON VISE

THE Stevens universal piston vise has four points of contact on the piston. Its jaws are lead lined, and, in addition, there is a bed on which to rest the piston and which is said to enable one to "feel" the pressure, which can be regulated to exactly the right degree. The base is 5 by 10½ in. and the jaws 2¼ in. One jaw is movable and the other stationary in two positions. This is to accommodate large and small pistons.

It is manufactured by Stevens & Company.

BATTERY STEAMER

THIS battery steamer, manufactured by the Reliable Mfg. Company, is made with an instantaneous heating coil, automatic water control, quick detachable locking ring, and may be used with either natural or manufactured gas. The still has a capacity of ½ gallon per hour. It operates from a cold start to maximum output in three minutes. Thirty 6-volt batteries can be steamed in one hour. All internal parts are made of brass and copper.

APEX GASOLINE GAUGE

THE Apex gasoline gauge is designed for Ford and Chevrolet cars. The makers say it is simple in construction and one can ascertain the contents of the gasoline tank in the dark as well as in the daylight. It is not necessary to remove the gauge while filling. The makers state that the best grade of material is used in the construction of the gauge. The indicator is made of imported clock tempered spring steel, and the figures are etched, thereby assuring a permanent graduation. No tools are necessary. It is installed by removing old filler cap and replacing cap with gauge. It is manufactured by the Apex Electric Mfg. Company.

BOSCH ADJUSTABLE IMPULSE COUPLING

THE Bosch adjustable impulse coupling is intended to work in conjunction with the Bosch magneto. It is a mechanical device for the purpose of obtaining positive and efficient starting, without the aid of batteries or a battery system of ignition.

It automatically "speeds up" the magneto armature at the exact moment of firing the initial gas charge, thus providing even at low-cranking speeds the full electrical capacity of the magneto.

It is very simple and compact, consisting of but three main parts—the impulse member, the driving disc and the adjustable drive member, all designed in accordance with S. A. E. dimensions.

It is located between the shaft that drives the magneto and the armature shaft. When the engine is cranked or barred over the armature is held stationary while energy is being stored up by the compression of the spring. At a pre-determined moment, the spring is released and the armature is given a partial turn at high-speed. In this way, intense sparks are provided, and the engine given its starting impulse. As soon as the engine begins its regular operation, or attains a speed of about 10 r.p.m., the impulse coupling is automatically disengaged, transmitting the driving energy to the magneto as a flexible coupling.

The construction of the adjustable member is such that when timing the magneto, a very fine fractional degree of advance or retard is readily obtainable.

The impulse coupling, the makers say, is practically dust and water proof. The operating parts are all case hardened steel, giving a high factor of safety. They are built to withstand indefinitely the sudden stresses to which they are naturally subjected. The spring action is carefully balanced, imparting an even torque to the armature, and eliminating all possible vibration. It is manufactured by the American Bosch Magneto Corporation.

BOTTOM NOW IN SIGHT

IN a recent issue of the "Nation's Business," Archer Wall Douglas, chairman of the committee on statistics and standards of the United States Chamber of Commerce, in his monthly report on general business conditions, stated that, in his opinion, the bottom of the present business depression would be reached early in January, 1921. Discussing conditions in agriculture he says in part:

"Advances of any moment in the prices of agricultural products will materially change the situation for the better, and reductions in the prices of commodities are likely to cause increased business in all industrial sections.

"From the unfounded fears of last spring of bread lines in the cities and shortage of food everywhere, we are awakened to the startling realization of a harvest so great that we cannot at once find an adequate market for our surplus products. So there ensues that inexorable law of supply and demand which decrees that over-production is always accompanied by falling prices.

"In many sections the farmers are holding their crops for higher prices and are not selling unless forced to do so by pressure from bankers and merchants to whom they are indebted. Consequently they have disposed of but a comparatively small portion of their crops, and are not in position to discharge their indebtedness or to buy anything save their immediate wants.

"Meanwhile the bankers are well loaned up and are chary about extending any further credits to either merchants or farmers under present conditions. The merchants, like the farmers, are buying only enough stock with which to do business. This means a much lessened volume of business, very rigid economy on all hands, close collections and a very general return to a strictly cash basis by an increasing number of merchants.

"There has been very little liquidation so far, and the general attitude for the present is that of waiting for farm products to go higher or for manufactured products to go lower, or for both to happen and thus bring about a needed readjustment.

"One observer in the southwest describes the situation by saying that the country is rich in every product, plenty of crops unsold, hogs, chickens, turkeys, cattle, good teams and farm equipment, but no money and banks loaned up. The answer, of course, is that the natural laws of supply and demand will ultimately work out the situation and no remedies or plans to bridge over the emergency can obscure this fact."

OPEN NEW BRANCH

THE Indianapolis branch of the J. I. Case Plow Works Company has moved into new quarters. This new building is constructed of reinforced concrete and is six stories and basement. There are three elevators, and modern heating and lighting is used throughout. C. H. Ticknor is the manager of the Indianapolis branch.

AFFILIATED WITH BRITISH CLUB

THE Canadian Automobile Association is now in complete affiliation with the Royal Automobile Club of Great Britain. The Ontario Motor League has been for some time, but this means that the nine motor leagues or associations of the different Provinces of Canada are now affiliated and their members entitled to the privileges of associate-membership in this powerful British automobile club, said to be the most influential motor organization in the world.

The affiliation will be particularly useful to Canadian motorists touring in Great Britain. In the first place the R.A.C. clubhouse in Pall Mall may be used as an address for letters and may be used as a rendezvous for meeting friends. Touring guides are at their disposal throughout the country as well as relief in case of accident or breakdown.

In addition there is free legal advice and arrangements are made and difficulties smoothed away in connection with tours of the continent of Europe.

BRITISH INDUSTRIES FAIR

ARRANGEMENTS have now been completed for the reception of a record number of visitors to the British Industries Fair which opens on the 21st of February in London and Birmingham, and on the 28th of February at Glasgow.

The first British Industries Fair was held in London in 1915. The coming Fair, though vastly increased in size and comprising the largest number of exhibitors of British and Colonial manufactures ever assembled in one trade fair, will be run on the lines which proved so successful in the past.

As only genuine trade buyers are invited, all who visit the fair are known to be there for business and not for curiosity. Exhibitors are therefore able to give proper attention to the buyer and the buyer is able to do his business unhampered by crowds of sightseers.

The services which are rendered to the invited buyer do not end with the mere bringing together under one roof of the chief British manufactures. Every possible assistance is given to him in finding the particular articles he wishes to buy. The resources of the British Government are at his call. In the fair buildings the Department of Overseas Trade opens fully staffed offices in order that buyers and exhibitors may obtain authentic information on all points of importance. F. W. Field, the British Government Trade Commissioner, at Toronto, will be in attendance at the London Fair and will be pleased to meet and assist all visitors from the Dominion. Other officers of the department will be available to answer inquiries as to tariffs in all parts of the world. A special staff gives information as to shipping and transport and other officials are prepared to advise as to the most likely sources of supply, not only of the articles included in the Fair, but also of all Empire productions. Such assistance is of incalculable value.

Material arrangements are made for the buyer's comfort and assistance at the fair. Interpreters are provided for his use free of charge. Special writing rooms are set apart for his convenience where he can carry on his correspondence. Special post offices deal with his letters and telegrams. Restaurants and tea rooms make it unnecessary for him to leave the fair buildings to get his meals.

Visitors to the fair also receive valuable assistance from the manner in which the catalogues of the fair are produced. Instead of being mere lists of the names of the exhibitors, they are books of reference in which they can find in their own language a classified index of every article exhibited. Supplementary pages contain tables of English and foreign weights and measures compared; and the moneys of all the principal countries are compared with their English equivalents.

Buyers from overseas who wish to visit the fair should apply as early as possible to the nearest British Trade Commissioner at Montreal, Toronto, or Winnipeg, from whom they will be able to secure full information. On their arrival in England it would be to their advantage to communicate at once with the secretary, British Industries Fair, 35 Old Queen Street, London, S.W., or, should the fair have commenced, at the White City, Shepherd's Bush, London, W. 14.

Intending visitors will do well to secure hotel accommodation in advance, and Messrs. Cook and Sons with their world-wide organisation will provide every facility for doing this.

"SPEDOLENE"

Keeps gears running smoothly all Winter

"Spedolene" is the all-year lubricant for transmissions, differentials, Universal joints, bearings, etc. It is unaffected by climatic conditions, it gives as perfect lubrication in the middle of Winter as in Summer.

"Spedolene" is made from the best quality Pennsylvania Cylinder Stock blended with a scientifically prepared asbestos. These and other ingredients combine to cushion the gears, forming a sort of buffer that prevents wear and tear. "Spedolene" will not separate, or corrode gears or bearings.

Write for full particulars of "Spedolene" selling plan.

SPEDOLENE REFINING & MANUFACTURING CO., LIMITED
MONTREAL

NEW STOPGLARE LENS

(a) **Offer the best selling proposition to the trade to-day.**

(b) **They are the cheapest lens on the market to-day and retail at $2.00 per pair.**

(c) **They comply with the law in its entirety and are given a maximum rating of candle power.**

(d) **They are the only lens giving the choice of three colors, namely: amber, green, and violet.**

(e) **They are Canadian-made lens.**

Before the new licenses are issued there is going to be one wild scramble for lens. The average motorist will not invest in the high-priced commodities when he can buy something that fills the bill just as effectively for a nominal figure.

Write for trade particulars as this proposition gives the largest discount to the dealer of any lens on the market.

Sole Manufacturers:

ONTARIO PLATE GLASS LIMITED
Hamilton -:- Ontario

What About the Power Farming Business?

Let's Get Busy! Inaction Breeds Discontent and Pessimism. We Have Entered An Era of Thrift and Sane Business. Farm Equipment is in Keeping With the New Order of Things. There is Work to be Done—Real Work and Lots of It

By H. G. WEAVER
HYATT ROLLER BEARING COMPANY

I AM not here to account for existing conditions. I have little patience with people who spend their entire time trying to explain why business has declined. The calamity howlers and the statisticians make their living by arriving at spectacular conclusions—they know a lot of things that "ain't so"!

The long anticipated period of readjustment is upon us—there is no use in evading the issue—we have heard warnings for the past two years. Good crops and unlimited credits have served to prolong our post-war intoxication. Everyone has gone the limit. We have been taking Christmas presents off the tree until there are no Christmas presents left.

Spending Orgy

We have passed through a time when everyone has had the spending fever.

The farmer has been no exception to the rule. He has been extravagant right along with the rest of us, but his extravagance has not been in the purchase of farm equipment. We, of the farm machinery industry, have enjoyed an unusually good business since the war, but not nearly so good as those engaged in the less essential lines.

Frequently, we have heard the statements—that we would face the breadline—that a sound readjustment must start with the soil—that "Food is the foundation of the nation's strength"—that we were over-industrialized—that the exodus from farm to city jeopardized the very life of the nation.

That's enough for the historical side of it.

How do we stand right to-day? What are we going to do about it?

Farmer Raised Big Crop

Contrary to predictions, the farmer has raised big crops. Figuring our national wealth in bushels instead of dollars, we are better off than we've ever been before. Money has changed in value, but when you get back to first principles, the amount of food and clothing required per man remains the same. These essentials are, after all, the true standard of value. The prices of many commodities are out of balance when compared to the true standard. Such a condition must and will be adjusted. **But right to-day a bushel of wheat will go further in the purchase of farm machinery than it would before the war!** If food is really the "Foundation of the nation's strength," America to-day is a veritable giant—We have never been any better fixed on foodstuffs and there is no prospect of conditions changing. True, the farmer is suffering as a result of the readjustment period, but contrary to sensational reports, he is not going on a "strike"—neither is he burning any foodstuffs. His economic vision is far too broad for that. On the contrary, he is putting in an acreage of winter wheat decidedly in excess of the average acreage for the five year period preceding the war.

The present price of wheat may not be sufficient to cover the cost of raising it, but a large percentage of the crop has not been sold. The farmers are holding back their crops and the national farmer organizations are, in the meantime, making some real progress in the establishment of more efficient marketing channels.

Are We Doing Our Share

The farmers are taking an active part in the country's business. Never before in our history have the affairs of agriculture been in the hands of more capable and representative men. Although it has always been generally conceded that industry is several generations ahead of agriculture in aggressiveness and enthusiasm — right now, I want to tell you that the farmers have us beaten to death.

Are we prepared? Are we doing our share? Are we co-operating with the farmer to the same degree that he is recognizing the importance of our industry? Are we doing anything outside the line of duty to help him? Are we boosting for him at every opportunity? We must become a part of this new era that is growing out of existing conditions—not next month or next year, but right now!

The farmers have been preparing for the readjustment period for the past two years—just what are we doing? How many of you fellows are getting any business? How many of you are even trying to get any? How many of you are preparing for the spring rush?

I talked to three farmers last week who hadn't been approached on the purchase of any new equipment for over six months.

We are waiting for something to happen—but nobody seems to know just what!

Can't "Pass the Buck"

Readjustment is a personal problem—you can't "pass the buck"! Readjustment must begin with you yourself. If every man will do the job at hand—do it well—do it enthusiastically—do it with a war-time energy—there'll be no need to worry about conditions.

The sales manager can't impart enthusiasm if he hasn't got it and the salesman can't sell the farmer unless he himself is 100 per cent. sold. We're just barely getting started on this power farming proposition. It's bigger than we've even dreamed. We've simply got to get the big idea into our heads. We must think in big figures.

"As a man thinketh in his heart—so is he"—and the other fellow is sure to find it out!

The farm market right to-day is the most desirable in the whole world. We are closest to it. The farmer may, and undoubtedly will, curtail his expenditures for silk shirts, music boxes, oil stocks, etc., but he will buy more and better farm operating equipment. History will repeat itself with emphasis. We must be prepared.

Must Have Confidence

The farm machinery industry is inseparable from the farmer on the one hand and the banker on the other. Before your business can come into its own, these three factors must be bound together with the bonds of confidence.

The farmer has greater confidence than ever before. He has confidence in agriculture or else he would not be planting so extensively—neither would he be spending time and money in the organization of national associations to protect the future interests of agriculture. The farmer has confidence in the new era of power farming—if he didn't he would not be paying such high prices for land—nor would he be pointing to power farming equipment as the solution to so many of his problems.

We, of the farm machinery industry must, in turn, have unshaken confidence in the farmer. Then and not until then will we be able to cope with the problems of readjustment.

Confidence is the basis of all credit. in fact, credit is nothing more nor less than confidence in action.

Until we have full confidence in agriculture, in the farmer, in the farm machinery industry, and in ourselves, we cannot expect the banks to fully support our cause.

And again, confidence is the "Federal Reserve" of enthusiasm. Most of our troubles are mental. We can't change all of the conditions confronting us, but we can place ourselves in a position to meet them with courage, energy and intelligent optimism!

The farmer has his hands full with his own immediate problems. Does it not behoove us to study his farm equipment requirements, analyze his implement needs, keep in close touch with him, and place ourselves in a position to give him the best service?

Intimate Contact With Farmer

The fact that collections are slow should be no excuse for remaining dormant. We should maintain a more intimate contact with the farmer than ever before. Liquidation is in order and it is of greatest importance that our industry receive the proper recognition in banking circles. Intensive sales effort will bring in the cream of the business.

That dealer will prosper most who has the greatest number of customers from which to choose.

Suppose right to-day, the farmers should all sell their wheat at a profit—or even at a loss, where would we stand? Would we be prepared to meet his demands? Have we even gone so far as to estimate his requirements? Much of the equipment that will be required to plant, cultivate and harvest next year's crops has not yet been built. Isn't it time for us to get busy?

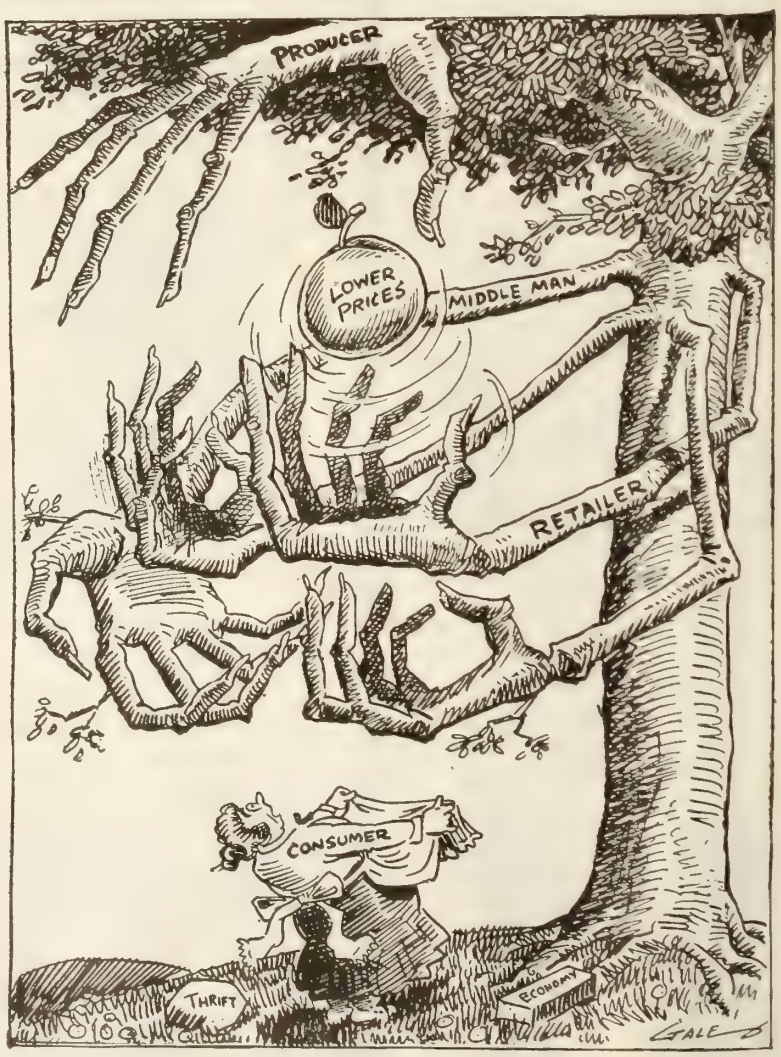
With the present high land values and the existing level of prices for farm products, the farmer, more than ever before, will be compelled to make use of the most modern and efficient equipment if he is to earn a dividend proportional to his investment. This has been said before, but it hasn't been said half enough! The farmer knows it, but he doesn't know it bad enough and now is the time to hammer it home.

Let's Get Busy

Let's get busy! Inaction breeds discontent and pessimism. What's become of the implement dealer who complained of slow deliveries? What's become of the farm machinery salesman, who, six months ago was complaining because the farmer bought luxuries instead of essentials?

We have entered into the regime of the matter-of-fact and the common-

(Continued on page 34)



—Gale, in Los Angeles "Times."

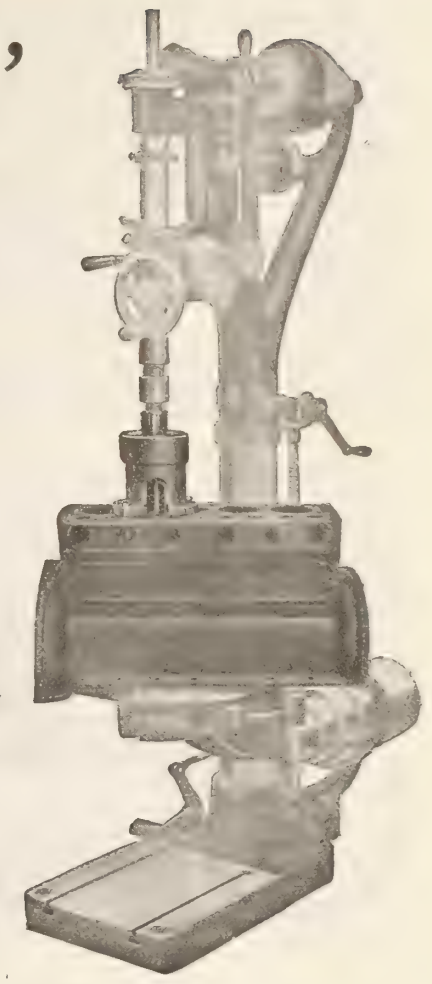
Seems to be some slight delay.

"She'll be ready to-night"

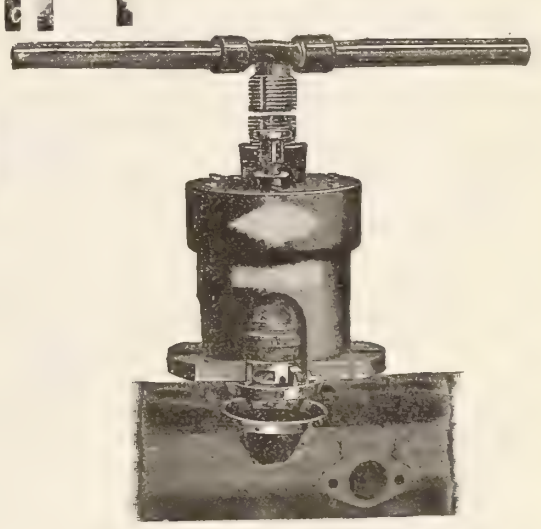
There's a welcome announcement to every motorist who has experienced the annoying delays consequent to sending engine cylinders to the factory for reboring.

Your customers, whether owners of automobile, truck, tractor or gasoline engine, will be "tickled to death" with the service you give if you are using a

"I don't have to send the cylinders to the factory now"



Operating with power driven drill press



Operating on a detachable head motor—by hand

Universal Cylinder Reboring Tool

This tool is used and recommended by these and other manufacturers—Ford, Dodge, Studebaker, Buick, Paige-Detroit, Chalmers.

Does as good a job as can be done anywhere. Eliminates delay, shipping difficulties, freight or express charges and exasperation. Adds to your profit and pleases your customers.

Can be operated by hand or in conjunction with a power-driven drill press.

Clip the coupon and mail it to-day. We will gladly send fullest details.

Tool complete ready for shipment

Windsor Machine and Tool Works

312-318 Pitt Street, Windsor, Ontario

I, (or we) are interested in the UNIVERSAL CYLINDER REBORING TOOL, and would like to get more information on this equipment. You claim it will materially increase profits of this business; if so, I, (or we) are anxious to know about it.

Send any literature pertaining to same to

Name..... City.....

Street..... Prov.....

We repair the following cars.....

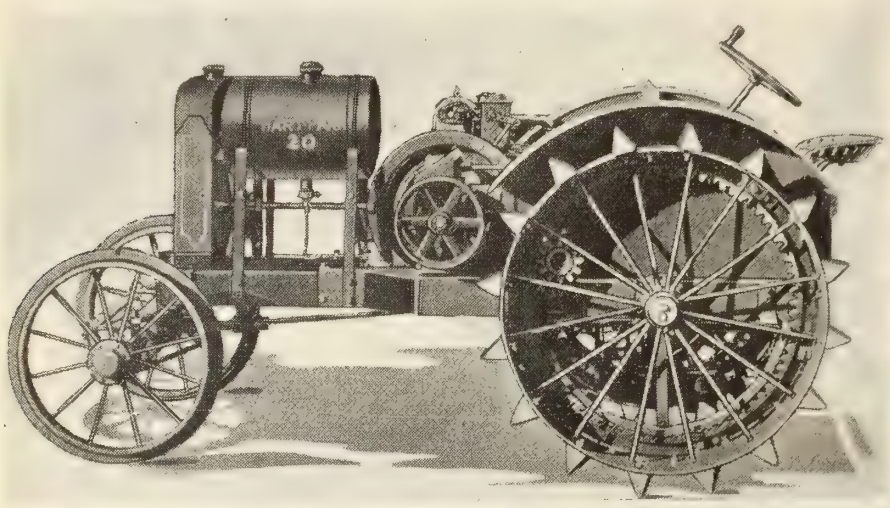
Name of my jobber.....

New Hart-Parr 20 Tractor

THE Hart-Parr Company, Charles City, Iowa, announces to the trade a new model of tractor in addition to the Hart-Parr 30. The new model is the Hart-Parr 20, two plow tractor, following very closely in design the Hart-Parr 30, which is generally known to the trade, and includes many of the features which have been used in connection with Hart-Parr tractors ever since the first one was built in 1901.

The general features of the Hart-Parr 20 are the separate units, independently and accessibly mounted, of tractors generally are. With this reserve of engine power, the makers claim, the Hart-Parr 20 can operate efficiently the general run of belt-driven machinery now being built, thus removing an objection which has been very general against tractors of less than three-plow capacity.

The engine is the valve-in-head type and is almost identical with that of the Hart-Parr 30. It has been refined in that valves and valve levers are completely enclosed. The mechanism is well oiled by the mist carried off from the crank case. The valve push rods



The new Hart-Parr 20 is a replica of the 30

engine, transmission, frame, etc. The engine is of the simple, two cylinder, horizontal type and designed to burn kerosene fuel to the best advantage. The same kerosene burning guarantee covers the Hart-Parr 20 as has covered all other Hart-Parr models, namely: "It is guaranteed to burn kerosene, to develop as much power from it and to use no more of it than of gasoline." A mechanical lubricator with independent pumps and feeds delivering clean, cool, fresh oil to each piston and crank shaft bearing is used on the "20." The belt pulley is mounted on an extension to the engine crank shaft and furnishes direct drive for belt operation. This design locates the pulley in the most advantageous position for connecting up with belt driver machinery, allowing the tractor to back easily into the belt.

A heavy crank shaft is carried on two bearings in a rigid crank case provided with a large inspection cover. This design makes all crank shaft bearings readily accessible and very accurate adjustments can be made in the shortest possible time without the necessity of disturbing other engine parts.

Like the "30," the new model is equipped with the Hart-Parr shunt, a patented device by which the fuel mixture is made to pass through an exhaust heated chamber under light load operation, but pass on to the cylinders in cool state at heavy load. This system, the makers say, allows all expansion of the fuel from cold to hot to take place in the combustion chamber, thus increasing the power and economy without sacrifice to flexibility. A simple band clutch operates the flywheel, and adjustment is provided by turning up an accessibly located nut threaded over one end of the clutch band. This gives ease of control.

The Hart-Parr 20 is equipped with two speeds forward and one reverse. The two speeds forward are both usable plow speeds. On low gear the tractor travels two miles per hour, and on high gear three miles per hour. The engine has sufficient power, it is claimed, to pull two plows under practically all conditions when operated on high gear. The new tractor is designed as a two plow tractor, but is somewhat larger in capacity than two plow

are tubular with hardened ball end buttons, welded to the tubes. Adjustment for proper clearance is made by turning threaded sockets in the upper ends of the valve levers, which are split on one side and provided with lock screws. The water jacket is especially large and, it is claimed, the circulation through the head and around the valve stems is well worked out.

The water circulating pump is located on one end of the governor shaft and is so piloted to the governor housing that no pump bearings are required, and only one stuffing box. The pump shaft passes through the stuffing box and is covered with a bronze sleeve, which eliminates the possibility of a rusty shaft and the rapid wearing out of pump packing. The governor is fully enclosed, gear driven, and runs at engine speed. It is built on the magneto drive gear and located accessibly on top of the crank case.

Cooling of the engine is obtained by the conventional radiator and fan located at the front end of the tractor. The fan blows air through the radiator and the engine exhaust is piped to the front end of the tractor. This combination keeps all of the smoke away from the operator and adds greatly to his comfort. The frame is one piece steel construction, which gives the engine a solid base on which to operate. The frame is underslung on the axles, thus giving a low, compact appearance to the tractor. The rear axle passes through brackets in the rear of the steel frame. These brackets are cast as part of the frame. The front axle is mounted ahead of the frame so as to have plenty of room to oscillate. Limit stops are cast into the front end of the frame so that the axles cannot swivel too far. Power is delivered to the rear wheels through an accessible spur gear transmission. The internal driving gear system is used, which, the makers claim, ensures delivery to the drive wheels of maximum power at a minimum of loss.

The special Hart-Parr Mountain type of drawbar is used the same as on the "30." This drawbar gives an upper and lower hitch. The upper is sixteen inches from the ground and the lower is twelve inches. The entire bar is swiveled, allowing free action from all angles. The tractor is equipped with a large, roomy platform and spring seat bolted to the floor slightly to the right of the centre, thus giving clear vision for the operator. In plowing the tractor operates with two wheels in the furrow, thus giving a straight line of draft and eliminating the necessity of special steering apparatus.

The new model will be marketed through the same sales organization of distributors and dealers as handle the sale of the "30." The factory will be in limited production of the new tractor January 1, 1921. It will be first publicly shown at the National Tractor Show at Columbus, Ohio, in February.

Briefly the engine specifications are: Horse power rating, 20; horse power maximum, 25; cylinders—2, 5¼ in. bore by 6½ in. stroke; governed speed, 800 r.p.m.; main bearings, 2½ in. diameter by 4 in. long; connecting rod bearings, 2½ in. diameter by 2¾ in. long; connecting rod length, 14 in.; valves, 1⅞ in. clear diameter by ⅜ in. lift; carburetor, 1¼ in., in combination with Hart-Parr shunt. The wheel base is 75 inches. Weight, with tanks and radiator full, 3,800 pounds.

Otwell Tractor Mower

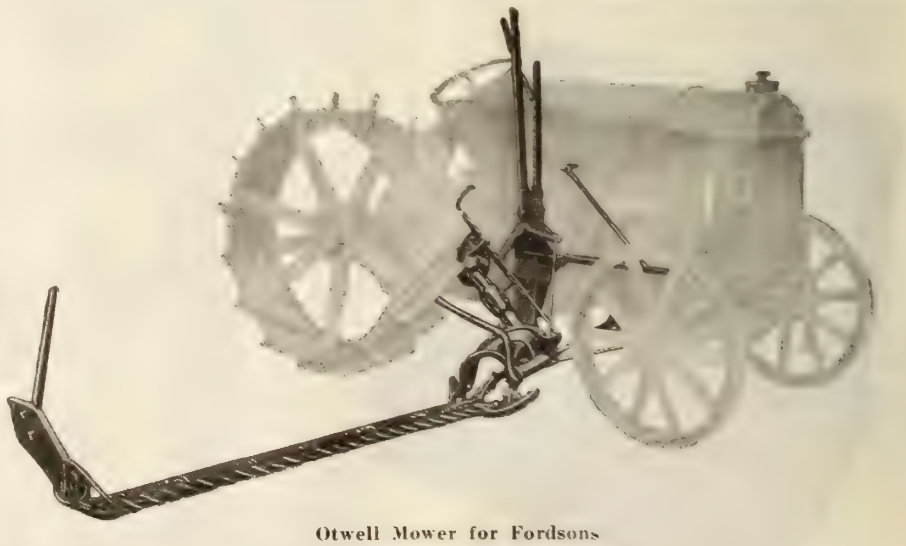
THE Otwell mower, built for attachment to the Fordson tractor, is a one-man outfit. The power to drive the mower is taken from the tractor pulley gear and is dependent upon the speed of the engine. This new machine, the makers say, is unique in design, and while it deviates from the conventional in mower design it has many advantages over the well-known horse-drawn type. In the latter the power to drive the cutting knife is obtained from the traction of the mower wheels. In the Otwell machine the loss of power due to the rolling friction of the mower wheels over the ground, it is claimed, is entirely done away with, as the drive is direct from the engine.

The Otwell mower is made of high-grade material throughout and is machined to very close limits, so that it may work satisfactorily and stand up for a long period under the strain of tractor speeds. Horse-drawn mowers originally were not designed to operate under high speeds, such as a tractor maintains. Among other features claimed is the fact that it is light, weighing about 320 pounds when crated for shipment. Because of its simple design it can be attached to the tractor in about one hour. The mowing bar can be detached for other work in the hayfield in about five minutes and replaced in about the same time. The gears, shafts, clutch and bearings are enclosed and run in oil. The entire length of the cutter bar in its cutting position is within view and the controls are on the right side within easy reach of the operator. One long hand lever on the right raises the mower bar so that it will pass over stumps or stones, and the bar itself can be carried upright for travelling through gateways and on the road. The bar may be tilted, that is to say, the guards may be raised or lowered with the short hand lever for high or close cutting.

The mower is driven off the outer end of the pulley gear through a set of mitre gears. The driven gear is mounted on the extreme upper end of the pitman shaft, which extends diagonally downward and forward. The shaft is carried in die-cast nickel-babbitt bearings in a cast housing, the latter bolted to the pulley housing at the top and to a bracket, which in turn is held by three of the bolts which pass through the clutch bell housing flange. The pitman shaft is in two parts which are connected by a positive jaw clutch. This clutch, which, of course, throws the mower in or out of gear, is operated by a shifter handle, and is located very convenient to the operator. The pitman and wheel in their operation are conventional in design. The pitman is a special balanced drop-forging, provided with a hinged side for quick attachment and detachment at the knifehead. The moving bar with a 6-ft. cut is of special design, and there are two knives furnished with each mower.

The method of attaching the mower to the tractor is simple and anyone, the makers say, can attach the machine with ease. The mowing bar is adjustable through the drag-bar support, so that the knife sections can easily be centered on the guard plates, thus insuring proper cutting stroke. The outer end of the mowing bar, when ready for cutting, is set slightly forward in relation to the inside end at a rate of about ¼ inch to the foot, so that when heavy cutting is encountered the drag on the bar will not carry it back further than at right angles to the tractor.

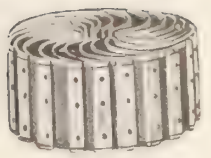
The Otwell mower is built to operate at 1,000 r.p.m. of the tractor and is guaranteed up to that speed. It is built to operate most successfully in high speed, but will give good success in intermediate or plow speed of the tractor if care is taken not to run the tractor motor in excess of the 1,000 r.p.m. limit. In regard to lubrication the power take-off housing is kept at least three-quarters full of a high grade of transmission oil at all times, care being taken to see that all bearings are oiling properly when machine is first started, and after that it is merely a matter of adding oil about twice daily, depending, of course, on cutting conditions, etc. The knife and knife head are oiled with an ordinary oil can.



Otwell Mower for Fordsons

It is manufactured by the Otwell Mower Co., 1309 Livernois Ave., Detroit.

MR. DEALER:



Viking Straight Disc Bowl skims to a trace

How many Separator Sales did you lose last year because———

A good Cream Separator should not turn hard

1. Hard turning.
2. Too many discs to wash.
3. Prospect learned that his neighbor had to spend Thirty Dollars to get the same machine repaired last year—bowl out of balance.
4. No selling help from company.

If you had a "Viking" Contract you could save these profits because———

The "Viking" is the easiest running Separator made

1. The "Viking" turns easier than any other separator made.
2. Can be washed in a minute—straight discs on key ring wash like one piece.
3. In ten years not a single customer has paid even as much as a Dollar for balancing a "Viking" bowl—The "Viking" is unconditionally guaranteed for ten years.
4. "Viking" salesmen give you every sales help you could wish for.

Make this test with a Viking Separator

Set a "Viking" Separator on your show room floor and ask your next prospect to turn it; show him the inside of the machine; ask him if he ever saw anything more simple or with as few parts; then show him the straight disc, easy washable bowl. Let him read our Service Agreement and Guarantee.

The "Viking" is unconditionally guaranteed for ten years and it skims to a trace

Washes Easily

Get a Viking Contract now

covering a stated exclusive territory

Swedish Separator Company

422 Power Building

Montreal - - Canada

You Can't Get Away With It!

DON'T take chances. Use the McKee Standard Lens that complies with the new "no-glare law" and adds class to your car. The lens is one solid piece of crystal-glass scientifically designed—needs no dimmers —no attachments.

McKEE Standard LENS

It saves the light that is wasted by the ordinary window glass lens and adds it to the intense beam of light which is concentrated and projected through the horizontal prisms down close to the road bed for 600 feet ahead. And not a ray of this bright white road beam can go above 42 inches from the ground to blind approaching drivers.

Why risk your life and those of others with makeshift devices that weaken the light to comply with the law? For safety's sake use the McKee Lens—the lens that combines on intense road beam with an adequate side light.

Remember that the McKee Lens is legal. It is to your advantage to equip your car with the McKee now.

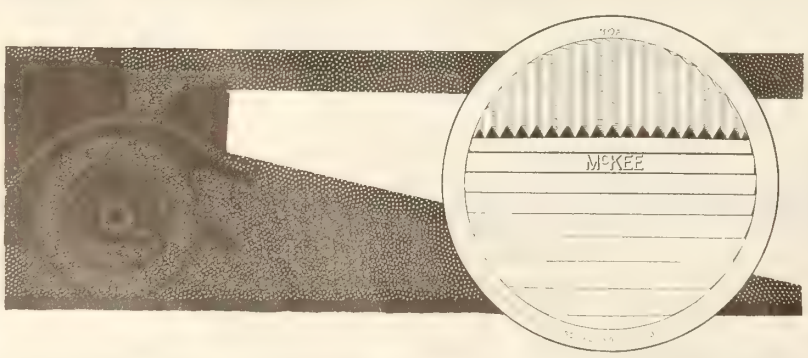
Garage Supply Co.

23 West Richmond Street, Toronto, Ontario, Canada

Distributors

McKEE STANDARD LENS

Made by McKee Glass Company, Jeannette, Pa.



SALESMEN OPTIMISTIC

AT THE 1920 convention of salesmen of the Ontario Wind Engine and Pump Co., just closed with a banquet at the Carls-Rite, much optimism was expressed as to the outlook for 1921, which is expected to outrun 1920 in business volume, although last year provided a record for this organization. Travellers' reports agree that the farmers are "swinging away from buying luxuries and placing larger orders for essentials, while the tillers of the soil are also figuring on planting much greater acreage in the present year." During the annual dinner A. T. Thom, managing director of the company, was presented with a handsome travelling bag as a gift from the outside sales staff, the honors being done by George Dane, who has been for 29 years continuously with the concern.

CANADA'S TRADE GREW IN YEAR

AN increase of approximately $464,000,000 in the total trade of Canada for the 12 months ending November 30 last, as compared with the 12-month period immediately preceding, is shown by the monthly summary prepared and issued by the Dominion Bureau of Statistics. The feature of the summary is the great increase in the total value of goods imported into Canada. For the 12 months covered by the summary, imports into Canada totalled approximately 1,345,000,000, as compared with 920,000,000 in 1919, or an increase of 425,000,000.

The Dominion is increasing its importation from the Mother Country with great rapidity. In the 12 months ending November 30 imports from the United Kingdom were to the value of $228,925,844, as compared with $84,638,900 in 1919. Imports from Cuba jumped from $10,000,000 to $34,000,000 in value during the year.

Importation from the United States apparently shows no sign of decreasing. During the period under review, imports from that country amounted to $927,664,711, as compared with $725,968,653 in 1919.

The value of Canadian produce exported to the United Kingdom in the 12 months ending November 30 was approximately 160,000,000 less than in the preceding 12 months. In the period covered by the summary, goods valued at $352,083,388 were exported to the United Kingdom from Canada. In the corresponding period in 1919, goods worth $514,012,960 were exported. Exports to France show a decline of some $22,000,000, and to the United States an increase of somewhat over $100,000,000, the figures for the latter country being: 1919, $443,416,125; 1920, $545,283,365.

NEW LICENSE PLATE

ANNOUNCEMENT is made that the automobile license plate for 1921 will be a novelty for this province in that the figures on it will be embossed. Numbers of more than four figures will be hyphenated. Orange-colored letters will be used on a black background.

WHAT ABOUT THE POWER FARMING BUSINESS?

(Continued from page 30)

place. Farm equipment is in keeping with the new order of things.

The superficial is no longer popular. We are down to earth. We have entered an era of thrift and sane business. The new call is for less waste —more production—greater efficiency.

What industry comes nearer checking up by this formula than that of modern farm machinery?

The past five years of agricultural history have brought forth amazing evidence in support of power farming. No class of salesman in the whole world has a greater abundance of real sales ammunition than we of the power farming equipment industry.

We must make the most of it. We must do constructive, co-operative work—we must have confidence in one another—the forces of our industry must move in harmony. We must hold our own against outside competition.

We must all boost farming equipment—there is no room for the "knocker." Knocking acts as a boomerang. We must mobilize our forces and put forth a concerted effort for the good of each other just as the farmers are doing. We must formulate a creed of constructive salesmanship and stick to it.

And listen!

Let's start in right now. I challenge any man to keep busy and pessimistic at the same time. We are stunned by the bigness of our economic problems. The longer we remain inactive, the worse it will be.

How many of us are working as hard right to-day as we were six months ago? How many of you are talking pessimism before your sales-force, instead of calling their attention to their opportunity to prove their worth?

Before conditions change, we've got to have a change of heart. There is work to be done—real work, constructive work and lots of it.

ARE WE EQUAL TO THE CHALLENGE? WILL WE MAKE GOOD OR HAVE WE HIBERNATED FOR THE WINTER?

Tractor Agency for Canadian Territory Open

The General Ordnance Company of Cedar Rapids, Iowa, Derby, Conn., New York City, etc., are open to appoint dealers and distributors for G-O Farm Tractors for the Province of Manitoba. The Province of Alberta is also open for 1921, and some portions of Saskatchewan, and applications are invited from business firms or individuals who are financially able to handle a whole Province on a distributing basis. Correspondence is also invited from dealers desiring a local territory. Address reply, The General Ordnance Company, Cedar Rapids, Ia.

Have The Cylinders Reground

and see how well the old "Buss" will act, in fact, it will seem as if it wants to show its appreciation by good behaviour.

Our plant is specially equipped for this kind of work and our mechanics are experts in this line.

PISTONS, RINGS and PINS made on short notice

"Special discount to the trade"

OXY- ACETYLENE WELDING

Advance Machine & Welding Company

177 F Canning Street Montreal

NEWS — OF THE TRADE FOR THE TRADE

ONTARIO

PICTON.—The Kemsley-Gerow Garage Co. have opened a large garage here.

KINGSTON.—The Blue Garage, recently destroyed by fire, is now being rebuilt.

PORT HOPE.—George McCague has been appointed agent for the Cockshutt line.

WHITBY.—The Chevrolet agency for West Whitby has been secured by the Central Motor Sales.

OSHAWA.—Ross Mackinnon has been appointed sales manager of the Chevrolet Motor Company of Canada.

ELORA.—R. G. Fasken has secured the agency for Ford cars. He also handles trucks, tractors and implements.

GUELPH.—M. Cook, manager of the Gilson Mfg. Co. branch at Winnipeg, visited the company's factory here recently.

TORONTO.—The Canadian Tygrad Engine Co. will erect on Kingston road a new plant for the manufacture of carburetors.

CHATHAM.—W. C. Fursey has been re-elected president of the Chatham Automotive Dealers' Association. N. E. Kent is secretary.

SEAFORTH.—Robert Bell, president and general manager of the Robert Bell Engine and Thresher Co., recently spent a few days at the company's Winnipeg branch.

SOUTHAMPTON.—The Maple Leaf Garage is a new business opened here. Greathead and Rourke are the proprietors, who handle all kinds of repairs, accessories, tires and oils.

OSHAWA.—Announcement is made of the appointment of R. S. McLaughlin, of General Motors, to be Honorary Lt.-Colonel of the Ontario County Regiment, recently organized, with headquarters here.

LISTOWEL.—A. Stricker has purchased the repair business in connection with McMillan's garage. Mr. McMillan still retains the Gray-Dort agency and will continue to use his present office in the garage.

WELLAND.—Fulton Motors, Limited, have decided to locate their Canadian plant here. The property of the Canadian Automatic Transportation Co. on Ontario Road has been secured and additional buildings will be erected.

WALLACEBURG.—The new Kent County road leading into Wallaceburg along the north side of the east branch of the River Sydenham was opened recently by County Road Superintendent Pardo.

MARMORA.—The garage business formerly conducted by Stan. McMeehan, together with the McLaughton automobile agency, has been taken over by Wesley Wannamaker, who will handle accessories, repairs and vulcanizing.

BROCKVILLE.—The new plant of the Machinery and Foundries, Limited, is almost ready for operation. General foundry and machine shop products will be turned out, and there will be special attention paid to the manufacture of power and hand pumps.

KINGSTON.—Messrs. George Bawden and E. Blake Edwards have secured the agency for Chevrolet cars in this district. The partners have taken over the garage on Montreal street formerly occupied by Anglin Bros. Business will be carried on under the name of Bawden and Edwards.

LONDON.—Ald. John Bridge, president of the Chamber of Commerce, announced recently that negotiations have been successfully concluded with an American metal products company, which will establish a plant in London as soon as possible. The company will employ several hundred hands.

MANITOBA

PIERSON.—S. Mead, a well known implement dealer, died here recently.

ROSEISLE.—The Roseile Lumber and Implement Co. have purchased the implement business formerly conducted by W. D. B. Boyd.

WINNIPEG.—The Blue Bird Corporation, of Brantford, Ontario, will open a warehouse and establish a Western sales office here.

PORTAGE LA PRAIRIE.—A new implement tractor concern has started here. L. J. McDougall and M. C. Machan are partners in the new business.

MIAMI.—Fire caused considerable damage to the premises of W. Burrows, an automobile dealer here. Three cars and a lighting plant were destroyed.

ALBERTA

CALGARY.—The Hillhurst Garage on Second avenue is under new management.

MEDICINE HAT.—A new garage and repair business has been opened by C. Baker.

CAMROSE.—A. Christenson has purchased the automobile and accessory business formerly conducted by L. E. Martin.

GLEICHEN. — A new automobile battery repair and charging shop has been opened by R. N. MacLeod in connection with his McLaughlin Garage.

CALGARY.—T. H. Peacock, in order to secure more spacious quarters for his Exide battery business, has purchased the property and building located at 216 Twelfth avenue west.

SASKATCHEWAN

CARLYLE.—A. J. Rubin is operating a farm implement business here.

SASKATOON.—A new garage has been opened here by Messrs. Bensetti and Hulme.

DODSLAND.—The garage formerly conducted by E. E. McDonald has been purchased by R. Armour.

MELFORT—Ira A. Monsees is specializing in winter repairs on automobiles and tractors. His workshop is equipped to handle all kinds of repair work.

CRAIK.—Brown Bros. have taken over the implement business formerly conducted by Geo. W. Matheson. They will carry a full line of farm machinery.

WEYBURN.—A new service station has been opened by A. Davidson. He has the Overland and Gray-Dort automobile agencies and handles all kinds of repairs.

WHITEWOOD.—A new garage has been opened here by E. Duquette. He handles accessories, tires, and all kinds of repairs, including painting and varnishing and battery work.

ROULEAU.—The Excelsior Garage is carrying on a battery storage and repair service. T. W. Moore and Sons are the proprietors. They have recently installed a Tunger Rectifier for charging batteries.

CARLYLE.—D. A. Kippen has sold his garage business to R. H. Ford. The business is known as the Carlyle Mechancis. Ford cars, trucks and tractors are handled together with a complete repair service.

Sell the line already half sold

A Double Guarantee

The name Lister is accepted all over Canada—all over the world—as a sufficient guarantee of dependability. Nothing but true quality could have built up such a reputation. In addition, every product bearing our name is guaranteed to do all we claim for it. We see to it that every customer is well satisfied with our products and service.

Lister Engine—Lister Milker—Melotte Cream Separator—Lister Premier Cream Separator—Lister Silos and Silo Fillers—Avery Tractor, etc.

Write for booklets and attractive selling proposition.

R. A. Lister & Company (Canada) Limited
Toronto and Winnipeg

Threshers, Wood Splitters, Saw Benches, Drag Saws

We specialize in the manufacture of those products, and can take orders at lowest prices: our situation as to workmanship and material being the very best.

Why not write to-day for catalogue and quotations?

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Limited
Warwick, Quebec

PERFEX

The Perfect Radiator

Perfex radiators for Fords are a quality product embodying features that cannot be had in other radiators.

A patented spring bracket suspension and a real radiator core of great efficiency.

The last word in Radiator construction

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"Quality and Service"

IN

TRACTOR and TRUCK STEEL CASTINGS

Joliette Castings & Forgings Limited

Head Office:
Transportation Bldg., Montreal

Works:
Joliette, Que.

MAYBE ADAM LAUGHED AT THESE

Johnny—"Pa, why do so many people get married in June?"

Pa—"I'll be darned if I know, unless it is the heat."—Kitchener Daily Record.

"That bacon you sent me yesterday was bad."

"Impossible, madam! Why, it was only cured last week."

"Well, then, it's had a relapse."—London Mail.

"What hit me?"

"A motorcycle."

"Impossible. I counted four wheels."

"It ran over you twice."—Birmingham Age-Herald.

Friend—"Did you have any accident on your trip yesterday?"

Mr. Otto Speeder—"I think so. When I arrived home I found two locomotive wheels, some mail bags and a part of a dining car on my fender."—Life.

"I understand the convict who escaped was noted for his polite manners."

"He was unusually polite. Even in escaping he left a note for the warden, saying, 'Please excuse the liberty I am taking.'"—Baltimore American.

"Say, Rastus, I done see de funniest thing t'day?"

"How come, niggah?"

"I seed an ottermobile with its reah license B—4."

"Say, bo, doan hand me no truck lak that."—Harvard Lampman.

Shopkeeper—"What can I do for you, my boy?"

Boy—"Please, I've called about your advertisement for a man to retail canaries!"

"Yes, and do you think you could do the work?"

"Oh, no, sir; but I only want to know how the canaries lost their tails?"—Boy's Life.

"Have some aigs dis mornin', Jedge?" asked the ebony waiter.

"Not this morning, Sam," replied the man of the bench, adjusting his spectacles preparatory to distinguishing the name of some dish on the menu from fly-specks.

"Ever try enny of our fresh-boiled aigs, Jedge?"

"Yes, indeed, Sam; and found 'em guilty."—Case Eagle.

"So you really think your memory is improving under treatment. You remember things now, then?"

"Well, not exactly, but I have progressed so far that I can frequently remember that I have forgotten something, if I could only remember what it is."—Boston Transcript.

Motorist (arrested for speeding): "Let me off this time, constable, and I'll give you ten dollars."

"What! You dare to try to bribe me, young feller!"

"Oh, very well. If you don't want the ten— "

"Nossir. I don't take no bribes. But y' might loan me ten dollars."—Life.

Wrote Mamie's mother to the teacher:

"I don't want that Mamie should ingage in grammar, as I prefer her ingage in yuceful studies, and can learn her how to speak and write proper myself. I have went through two good grammars, and I can't say as they done me no good. I prefer her ingage in French and hand painting and vocal music on the piano."

A cockney angler, thinking his Highland boatman was not treating him with the respect due to his station, expostulated thus: "Look here, my good man, you don't seem to grasp who I am. Do you know that my family has been entitled to bear arms for the last two hundred years?"

"Hoots! that's naething," was the reply. "My ancestors have been entitled to bare legs for the last two thousand years."

Picking her way daintily through the locomotive plant, a young woman visitor viewed the huge operations with awe. Finally she turned to a young man who was showing her through, and asked:

"What is that big thing over there?"

"That's a locomotive boiler," he replied. She puckered her brows.

"And what do they boil locomotives for?"

"To make the locomotive tender," and the young man from the office never smiled.—Overhere Digest.

We Repair Radiators, Fenders, Lamps, Etc.

Our staff is composed entirely of experts.

Let our experience increase your repair business

Send your work on damaged Fenders, Radiators, Lamps, etc., to us. Complete, up-to-date equipment, backed by 15 years' experience, enables us to give you the finest service in the land.

The Oldest House of Its Kind in Canada

Operating since 1906 and favorably known for reliability and reasonableness. We offer you a service at once prompt and profitable—and entirely satisfactory to your customers.

WHITE & THOMAS
210 Simcoe Street Toronto

AUTOMOBILE SPRINGS

The Guelph Spring and Axle Co.

Guelph - Ontario

Manufacture

AUTO SPRINGS
ALL KINDS
HIGHEST QUALITY

Sills "Rite-Lite" Lens

"The lens that made good in a night"

QUALITY
EFFICIENCY
APPEARANCE

"No Duty"

The high-grade **"Triple action lens,"** which produces a de luxe automobile driving light.

The **central bullseye** magnifies and intensifies the main rays for penetrating fogs and dust.

The **central prisms** direct the next strongest rays on the roadpath below forty-two inch line for several hundred feet.

MADE
IN
CANADA

"No Exchange"

The outer corrugated portion distributes the balance of rays, showing ditches, signs, etc., clearly. Carry the lens with the **central bullseye** and have the best.

Sold by garages everywhere

Complies with Non-Glare Laws

Retails at $2.65 Per Pair (all sizes)

DISTRIBUTORS

Canadian Fairbanks-Morse Co., Limited, Toronto
Rice Lewis & Son, Limited, Toronto
Aikenhead Hardware Co., Limited, Toronto
C. Kloepfer, Limited, Toronto
Union Petroleum Co., Limited, Toronto
Locke-Wade Co., Limited, Welland, Ontario

STEEL CASTINGS

for

TRACTORS

CANADIAN
STEEL FOUNDRIES
LIMITED

General Sales Office:

Transportation Building
Montreal

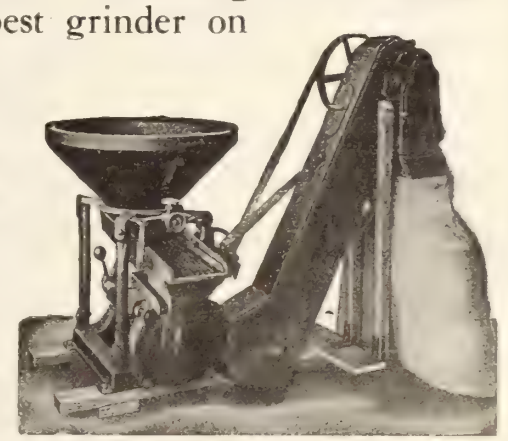
TRADE MARK S.V. REG

A complete line of Feed Grinders

The dealer handling "Vessot" Feed Grinders has a decided advantage in that he has a complete line of equal quality. Nine sizes, from 6½ inch to 15 inch —a size for every farm need.

Every "Vessot" Grinder is equipped with the inimitable "Vessot" Grinding Plates that make this the best grinder on the market.

"Vessot" Grinders and Plates are known to farmers everywhere who always look for the "S.V." mark, the assurance of clean cutting and long wear.



Grinder with Elevator and Bagger

Ask the nearest office of The International Harvester Company to explain the "Vessot" Agency Plan.

S. VESSOT & CO. *Sole Manufacturers* **Joliette, Quebec**

Sold by International Harvester Co. of Canada, Limited

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CANADIAN Motor, Tractor and Implement Trade Journal BUYERS DIRECTORY

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Canadian Linderman Co., Woodstock, Ont.
Guelph Spring & Axle Co., Guelph.
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White & Thomas, Toronto, Ont.
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Rice Lewis & Son, Ltd., Toronto.
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AUTOMOBILE JACKS

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Ames, Holden, MacCready, Montreal.

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John Deere Mfg. Co., Welland, Ont

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John Deere Mfg. Co., Welland, Ont.

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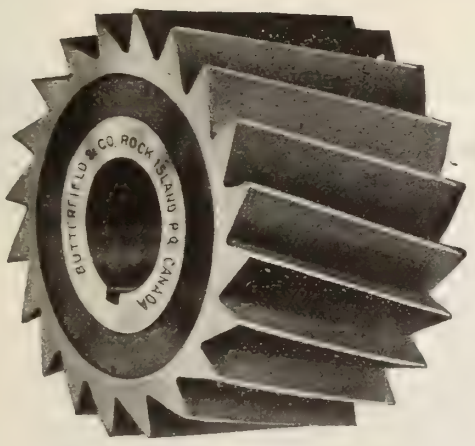
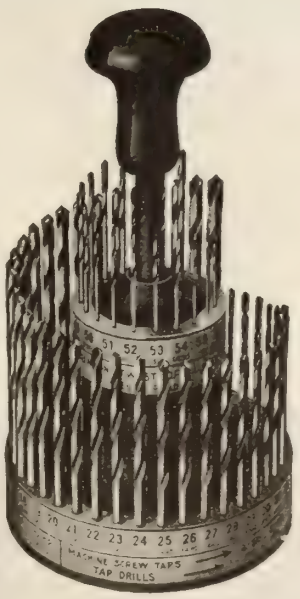
Drills, Taps, Dies, Reamers

and MILLING CUTTERS





Did you ever stop to consider how much the achievement of your ambition to turn out the best work in your locality depends upon the tools you use?

Poor tools will frustrate the loftiest ambition that ever animated a good mechanic, but tools of Butterfield quality develop in their users desire for greater knowledge and ability to do better work.

And what's more—Butterfield Tools last longer—another reason why they are,

"The Tools You Buy Again"

Butterfield & Company, *Division*
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ROCK ISLAND, QUEBEC
Toronto Office: 220 King Street West

HORACE E. DODGE DIES SUDDENLY

HORACE E. DODGE, last of the Dodge Brothers, died at his winter home in Palm Beach, Florida, on December 10. His illness dates from the time he and his brother, John F. Dodge, were stricken in New York City with influenza while attending the automobile show. John F. Dodge died on January 16, 1920. Mr. Dodge never fully regained his strength after the attack and had been in a serious condition for the last two months. Mr. Dodge was 52 years old and was born in Niles, Mich.

The brothers founded the automobile business that bore their name in Detroit, eight years ago, after engaging in the manufacture of automobile parts

The Late Horace E. Dodge

since the early days of the industry, when they were associated with Henry Ford.

The Dodge Brothers learned the machinist trade at Niles, Mich., where their first manufacturing venture was the building of bicycles. Later they came to Detroit and opened a small machine shop, in which experimental work on some of the first successful automobiles turned out was carried on. Their interest in the Ford Motor Company grew from $5,000 worth of stock, which was paid for in parts and the use of their shop, until several years ago it was sold for $12,000,000, after which the Dodges devoted their time exclusively to the manufacture of their own machine.

LEYLAND MOTORS

LEYLAND MOTORS, LIMITED, have taken over the premises formerly owned by the Grace Motors, Ltd., on Duchess street, Toronto. These premises are equipped to give a complete truck service and it is the intention of the company to provide a service for all makes of motor trucks.

VANCOUVER AUTO DEALERS ORGANIZE

R. H. FAIRLEY, organizer for the B. C. branch of the Retail Merchants' Association of Canada, reports that as a result of his work on Vancouver Island, 95 per cent. of the auto dealers have joined the R.M.A. A special section of this body has been organized, which will be known as the Provincial Automotive Retail Dealers' Section of the R.M.A.

The officers of the section are as follows: President, H. J. Holman, of Victoria; first vice-president, Neil McFarlane, of Weeks Motors, Nanaimo; second vice-president, Harry Moore, of Moore and Davis, Victoria; hon. secretary, G. W. Lillie, of Automotive Equipment, Ltd., Victoria; treasurer, C. P. Willis, of Jamieson and Willis, Victoria.

Among the results achieved by the Vancouver Automotive section might be mentioned the fact that the practice of manufacturers and jobbers selling direct to consumers has been stopped. The R.M.A. expect to organize two new branches on the Island at an early date, one at Ladysmith and the other at Courtney.

GET POST OFFICE CONTRACT

THE Eastern Canada Motor Truck Company, Limited, of Hull, Quebec, manufacturers of the Veteran motor truck, has just been awarded a contract for the supplying of 13 one and two ton delivery trucks to the Toronto Post-Office. Competition for the contract was keen, nearly a dozen firms tendering. Some of the trucks are already on the streets.

The company is one of the few genuine Canadian motor enterprises recently formed. The officers and directors include several men with distinguished war records, among them Major T. W. MacDowel, V.C., D.S.O. and bar, and Capt. G. Gordon Bell, D.F.C., Legion of Honor, Croix de Guerre.

HART-PARR CHANGES

THE Hart-Parr Company announces the appointment of C. A. Bishop to the position of Western sales manager in charge of sales in Western United States. For the past two years Mr. Bishop has been divisional sales manager for Hart-Parr Company with supervision over sales in Kansas, Oklahoma, Colorado and Western Missouri. Mr. Bishop will move his headquarters from Kansas City to the factory at Charles City, Iowa.

Harry A. Reed, who has been well known to the tractor trade for the past fifteen years, and who for the past five years has been with the Hart-Parr Company as Western sales manager, has entered the distributing business at Omaha. Mr. Reed has taken over control as general manager of the Omaha Tractor and Supply Company, who distribute Hart-Parr tractors and tractor-drawn machinery for Nebraska and Southwestern Iowa. Mr. Reed brings to the distributing business a wealth of field experiences which should prove especially valuable to him in his new endeavor.

The Hart-Parr Company announce the appointment of John P. Gregg to the position of Northwestern sales manager in charge of sales in Western Canada and Northwestern United States. Mr. Gregg has been with the Hart-Parr Company for the past twelve years in various capacities and this appointment comes as a well-earned promotion. He recently returned from a seven months' investigation of tractor trade conditions in Europe for the Hart-Parr Company.

C. L. Schnuerer, for the past five years with the sales department of the Hart-Parr Company, and for the past two years manager of Eastern sales, has severed his connection with that company to enter the distributing business. He has joined the forces of the East Iowa Hart-Parr Company, of Cedar Rapids, Iowa.

TRACTOR PLOWING DEMONSTRATION

THE Tractor plowing demonstration which was held on the farm of R. H. Lewis, Grimsby Mountain, recently, was a very successful meeting from an instructive as well an an interesting point of view. The attendance was exceptionally large and great interest was shown in the various types of plows used as well as the tractors.

There were four tractors operating: The Samson and Do-it-All, exhibited by the County Motors Limited, Grimsby; and two Fordson tractors by the Ford Motor Co. Jas. Fisher, local agent.

The field, which was sod, could not have been better suited for the purpose of showing off the various merits of the implements used, although not heavy enough land to test the pulling power of the tractors.

BENJAMIN HOLT DIES

BENJAMIN HOLT, president of the Holt Mfg. Co., Stockton, Cal., and Peoria, Ill., died at Stockton Dec. 5, 1920, after a short illness. He was born in Merrimac County, New Hampshire, Jan. 1, 1849. In 1868, Benjamin Holt with his brothers, W. Harrison, A. Frank, and Charles H. Holt, began the manufacture of wagon spokes and hubs. In 173, he established at Concord, N.H., a plant for the manufacture of wagon wheels, and during the ten years that he continued this business, he built up an extensive trade that gave him a wide reputation throughout the east.

In 1871, Benjamin Holt together with W. Harrison Holt and A. Frank Holt, entered the wholesale hardware and wheel business which had been established earlier in San Francisco by their brother, Charles H. Holt. The new firm was known as Holt Brothers Company, though Benjamin Holt did not go to California until 1883, at which time he and Charles H. Holt took up the manufacture of wagon wheels at Stockton, first under the name of the Stockton Wheel Co. In 1892 the Holt Mfg. Co. was incorporated at Stockton.

Benjamin Holt invented the self-propelled combined harvester, a combination of tractor and harvester. He also invented the Holt steam traction engine for mountain and desert work.

From the necessity of providing a surer traction for soft soils, Benjamin Holt gave the world his master invention, the track-laying type of tractor

The Late Benjamin Holt

bearing his name, and now known by the Holt trade-mark "Caterpillar."

More than 100 inventions are included in Benjamin Holt's achievements in the fields of agriculture and industry. Many of his best achievements were made in the later years of his life, his inventive faculties being retained in full measure up to the time of his death.

The deceased was married in 1890. He is survived by Mrs. Holt and five children, Alfred B., connected with the Peoria plant; William K., assistant manager of the Holt Co., of Texas, Dallas, Tex.; Edison, Benjamin Dean and Mrs. Warren Atherton, who reside in Stockton.

WANT LIGHTS ON ALL VEHICLES

SEVERAL resolutions of importance were presented at the opening session of the forty-ninth annual convention of the Western Ontario United Board of Trade, held at Chatham.

The Ontario Legislature will be petitioned to compel all vehicles, both motor and horse-drawn, to carry lights after the new regulations regarding the dimming of headlights come in in January.

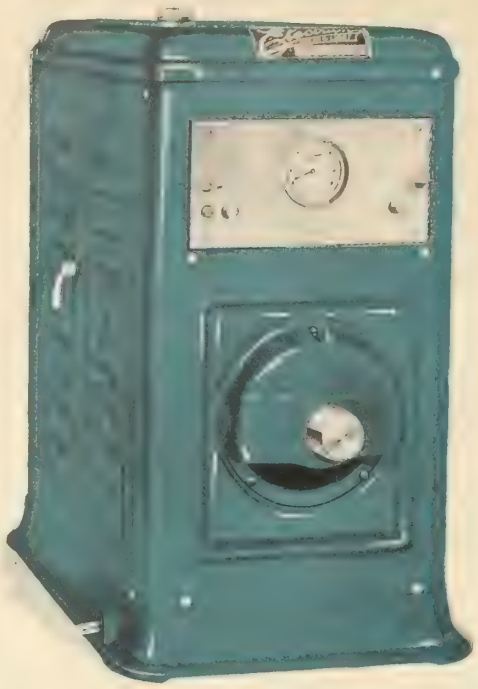
A Fleet of Veterans

Eastern Canada Motor Truck Co.

Limited

Hull - Que.

Some Good Territory Still Available



The Generating Unit

Electrion
POWER & LIGHT

As necessary to the farmer as his automobile

Have you ever considered the scope of the market in Canada for complete light and power plants? Do you know that 80% of the rural population will be interested in a practical, dependable electrical unit?

The Canadian Linderman Company is placing on the market a new light and power plant that combines utility and completeness with new and exclusive features of appearance and design. The generating unit is housed in an artistic, blue-enamelled steel case that protects the machine from accidents and children from getting hurt. At the same time it leaves the motor as accessible as if no case were there. The batteries are enclosed in a handsomely finished cabinet enamelled to match the unit.

The generator of the "Electrion" is directly driven from the most approved type of water-cooled gasoline engine. The unit is compact and simple. Anyone with even a rudimentary knowledge of motor cars will understand it perfectly and others will learn it easily as there are no intricate or complicated parts.

The "Electrion" provides ample current at small cost to light a church, hall, hotel, yacht, mine or farm-buildings and besides there is sufficient current for household conveniences and the lighter farm machinery.

As mentioned above this desirable plant is now being placed on the market. Territory is open for really aggressive agents—men who are ready to co-operate with us in placing an "Electrion" in every rural home in Canada. Full description of the Electrion and details of our proposition will be sent on request.

The Battery Cabinet

Canadian Linderman Company, Limited

Woodstock :-: Ontario

MANUFACTURERS FOR THE BRITISH EMPIRE

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

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VOL. III, No. 2 TORONTO, FEBRUARY, 1921 Subscription Price $2.00 Per Year

The Advantages of Electricity for Every Farm

Generating Unit

have not been overestimated. Your customers realize them and want them. Some may be able to get current from a power line, others—and they are the vast majority—must use an individual electrical unit. Here is your opportunity. Why not handle a modern, dependable power and light unit and profit by this growing demand?

The Electrion appeals to their common sense. The comforts of abundance of clean, bright light, the convenience of electrical devices about the home and the saving in time and money with light, electrical farm machinery, all come with the installation of an

Electrion
POWER & LIGHT

"Not an Expense but an Investment"

It's scientifically and sturdily built for efficient, dependable service, and besides combines mechanical excellence with new ideas in design and appearance. The generating unit is enclosed in a handsome blue enamelled steel housinig and the batteries are contained in a wooden cabinet finished to match. Appearance is a selling point second only to the mechanical excellence.

There are still agencies open for progressive, dependable men—men who realize the opportunity (80% of the rural population are prospects) and who will co-operate energetically with us in placing an Electrion in every rural home in Canada.

Write us for further information regarding the Electrion and for full details of our proposition.

Canadian Linderman Co., Limited

Dept. A

WOODSTOCK - ONTARIO

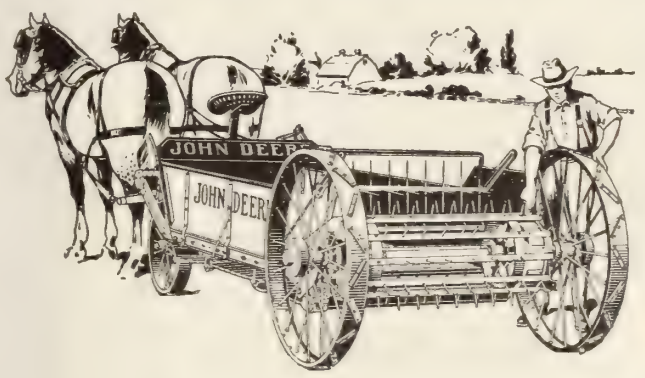
MANUFACTURERS FOR THE BRITISH EMPIRE

Battery Cabinet

This Spreader Illustrates John Deere Advantages

The John Deere Spreader illustrates the advantages characteristic of all implements in the John Deere line. A farmer has only to see a John Deere Spreader and these advantages are apparent. It is only 36 inches high—easy to load. Two levers control the mechanism—easy to operate. Mechanical improvements—the beater mounted on the axle, ball and roller bearings, no wearing parts exposed—give long life and sure operation.

In the next month or so farmers will be in the market for spreaders. If you are selling John Deere Spreaders and other farm implements, you are sure of satisfied customers and prompt sales. The John Deere dealers' policy gives full scope to ability. Write us for full details.



"Quality Line of Farm Implements"

John Deere Low-Down Manure Spreader; John Deere-Dain Left-hand Side Delivery Rakes; John Deere-Dain Rake-bar Hay-Loader; John Deere-Dain Sulky-Rake; John Deere-Dain Vertical-Lift Mowers; John Deere-Van-Brunt Plain Grain Drills; John Deere-Van-Brunt Fertilizer Drills; John Deere-Van-Brunt One-Horse Drills; John Deere-Van-Brunt Lime and Fertilizer Sowers; John Deere No. 999 Corn Planters; John Deere Cultivators; John Deere Scufflers; John Deere Smoothing Harrows; John Deere Spring-Tooth Harrows; John Deere Disc Harrows (Horse or Tractor); John Deere Field Cultivators; John Deere Beet Tools (Planters, Cultivators, Pullers); Hoover Potato Machinery (Planters, Sorters, Cutters, Diggers); "Reliance" Potato and Field Sprayers; "Waterloo Boy" Kerosene Engines; John Deere Walking Plows; John Deere One-Way Plows; New Deere Sulkies and Gangs; John Deere Contractors' Plows; John Deere Tractor Plows.

The John Deere Manufacturing Co., Limited

Welland Ontario

HYLO SYLO

GILSON dealers are making thousands of dollars selling HYLO SYLOS

WHY NOT YOU?

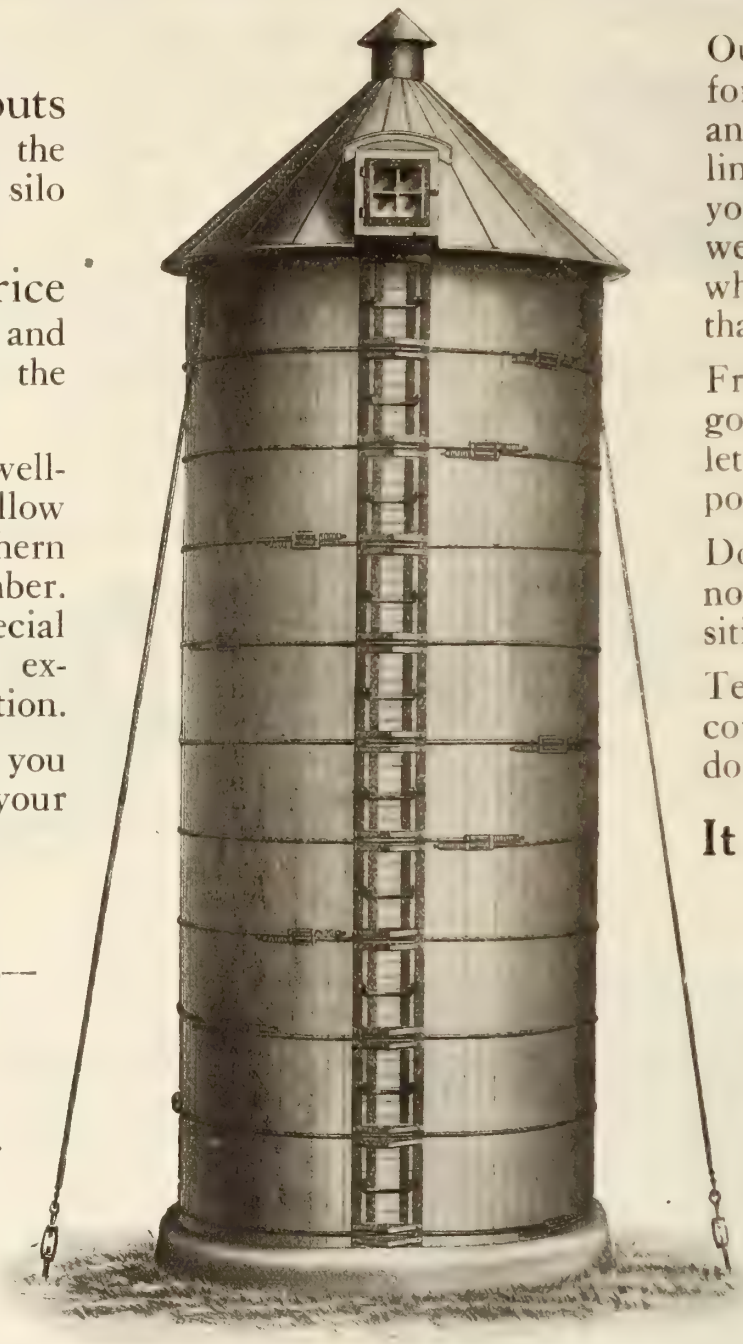
There's big money in the game!—We want you to get in on it! You've heard of the HYLO-SYLO? You know that it represents the highest achievement in silo construction.

THE HYLO-SYLO puts the Gilson Dealer in the strongest position of any silo agent.

The HYLO-SYLO price is as low as the lowest — and its value is as high as the highest.

It is made of either the well-known Long Leaf Yellow Pine or of Hardy Northern Grown Canadian lumber. The latter is treated in special preservatives. Both are exactly the same in construction.

With this combination you can lock the door on your competitors.



Our 1921 contract provides for bigger commissions than any other line you are handling. We have the goods—you have the connection—we will make it worth your while to push our silos harder than any other goods you sell.

Frankly now, doesn't it look good? You can't afford to let this money-making proposition go!

Don't put it off! Write us now for the agents' proposition.

Tear off, fill in and return the corner of this page. If you don't someone else will! !

Do It Now!

You can double your profits—we will show you how!

Write to-day.

You'll hear from us by return mail.

It Means Dollars To You!

No Silo is complete without the wonderful Gilson Silo Filler.

It has the largest sale of any under the British flag.

BIG PROFITS—EASY SELLERS

Something worth adding to your lines.

FILL IN AND RETURN AT ONCE! TEAR OFF HERE

Without any obligation on my part you may send me your agent's proposition on: (Put an X opposite the product that interests you.)

☐ **Silo**
☐ **Silo Filler**
☐ **Engine**
☐ **Cream Separator**
☐ **Manure Spreader**
☐ **Thresher**

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Post Office ..... Prov. .....
R. R. No. .....
Remarks .....

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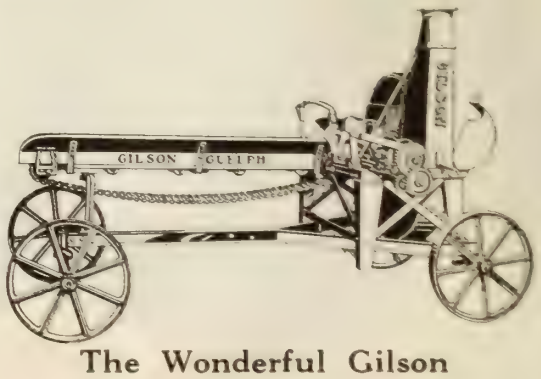
Branch and Warehouse
355 Elgin Ave.
WINNIPEG, MAN.



The Wonderful Gilson

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 TORONTO, FEBRUARY, 1921 Number 2

Keen Prospect Interest at London Show

Like the Montreal Show the London Exhibit Was Marked by a Resumption of Buying Interest, Especially Among the Farmers—The Tendencies Were Toward the Closed Models and to "Something a Little Better"

THE Motor Show held in London Jan. 31-Feb. 5 convinced manufacturers and dealers of two things. One is that there is going to be an unusual demand from farmers this year for cars. The other is that price is not the big consideration and that people are demanding "something a little better." It is estimated that more than 7,000 people visited the show, many of whom were farmers, who had motored in anywhere from ten to fifty miles. The men in charge of the exhibits were greatly impressed by the unusually large number of inquiries regarding closed cars. These came from men, many of them farmers, who were thoroughly "sold" on autos. It was obvious that they are planning to buy closed cars and dealers were unanimous in predicting that a splendid business will be done in this type of car during 1921.

Farmers Are Prospects

Many of the farmers who motored in are men who have been making big money for several years as a result of being able to sell everything they could produce at prices they had never dreamed of getting in the old days. These men are prosperous. They have money in the bank and they have been driving mostly small and medium priced cars. Now they are out for "something a little better." That was the note that ran all through the thousands of questions with which they plied the men in charge of the exhibits. There was absolutely no doubting their interest in any and every exhibit. Many of them came in prepared to stay, not one day, but the whole week if it was necessary. They were out to get all the information they could preparatory to getting a new and better car than they are now driving.

Fine for the Dealers

This was just what the exhibitors wanted. There is no doubt in their minds that business is going to develop from these calls. The removal of the luxury tax is a big help in stimulating business. In fact it is regarded by many as a vital factor.

"I regard the removal of the luxury tax from automobiles as the turning point in the industry in Canada," declared Frank McLachlin, of the London Overland Sales Co. "The effects were not immediate," he continued, "but when prices were reduced as a result of the removal of the tax it quickly became evident that there was a change in the attitude of the public. It has brought into the buying circle hundreds of people who were ready to buy cars, but were not ready to pay last year's prices. For the past two weeks the voluntary inquiries have proved that the 'buying strike' is over. If further proof were needed we have had it amply in the London Motor Show."

Keen Prospect Interest

Keen prospect interest was manifest throughout the entire show. Not only on the part of the several thousand visitors from the country, but also by city car owners. It was easy to talk to these people because most of them knew all about cars and the various parts. They were interested above all in finding out about the improvements that will make driving all the year round possible. They were interested also in everything that made for easier and better driving.

The exhibits of auto accessories were constantly centers of interest and those in charge were kept busy explaining how the various devices worked and what they would do.

The section devoted to auto trucks was the magnet for many business men and also for many farmers who are engaged in extensive shipping. One of the points they inquired about especially was whether pneumatic or hard tires were the best and why. One man claimed that his experience was that pneumatic tires added three years to the life of the truck in addition to reducing repair bills.

Breaking the Hunger Strike
—Darling, in New York Tribune

On Friday evening many of the exhibitors were guests at the banquet of the London Automotive Dealers' Association. Wilfrid Hodgins, the president, was in the chair and a most enjoyable social time was spent.

Large Display of Cars and Trucks

In all seventy-five passenger cars were on display and ten trucks within the armories and annex. An al fresco exhibit of trucks on the boulevard without the armories swelled this number to seventeen. The makes of cars shown were: Briscoe, Cadillac, Chalmers, Chevrolet, Columbia Six, Dodge, Essex, Ford, Gray-Dort, Hudson Super-Six, London Six, McLaughlin, Mitchell, Oldsmobile, Overland, Packard, Paige, Reo, Studebaker, Willys-Knight, twenty makes in all, while the trucks shown were: B. and J., G. and J., International Harvester, National, Packard, Reo, Seagrave and Loughead and Sterling. Fiat and Fordson tractors were on display, as were many accessory equipment exhibits and a trailer exhibit. About forty per cent. of the cars shown were "closed jobs." The range in price of the cars on display was from approximately $800 to $12,000.

The exhibits crowded the drill hall annex and overflowed into all the rooms flanking the former. Manager T. C. Kirby stated that despite the untoward conditions that obtained during the closing months of last year, applications were received before the first of the year for double the space available.

Mayor A. T. Little, who officially declared the show open, was introduced by Wilfred Hodgins, president of the London Automobile Trade Association. The mayor said that the association had done much that deserved great credit under the most unfavorable conditions. He told of the havoc the luxury and war tax had played with the automobile trade. He stated that the tax had been most unfair, and that it was a good thing that it was removed, as it was by no means equitable. Because the automotive dealers had suffered greatly by the system in which the tax was collected, he said they deserved much credit for undertaking such an elaborate show. He averred that the exhibition was a splendid success.

How a Saskatoon Garage Sells Service

A Complete Stock of Parts and Repair Service on All Makes of Cars Combined With Prompt and Impartial Service is Getting Business for This Firm

By G. H. SALLANS

SYSTEM for service, was the motto adopted a few years ago by two young men who started in business in Saskatoon, with a wooden building which still stands beside their present establishment, a monument to the mighty past, and a silent tribute to the initiative and originality which, together with considerable elbow grease, relegated it to the ranks of outhouses, still used, indeed, but as a store-room.

When S. A. Henderson and C. J. Brazier opened up in this city, they saw an opening in the automobile business, a gap which was not being filled, and which seemed unlikely to be filled. All about them men were selling automobiles, for those were the days of good business, but in all the host of dispensers there was not one who paid all of his nervous attention to the vital fact that wherever there are cars there must be repair shops. They had these shops, any number of them, but they were a secondary consideration, something run because the business of distributing gas buggies demanded them. Henderson and Brazier, armed with wrenches, blow torches and other implements of torture, made a sort of spearhead, and waded into their experiment. It quickly became a fact. Now it is more than a fact, it is an accumulation of facts.

Don't Sell New Cars

First of these is, that though times have changed vastly, both within and without their establishment, their policy has remained the same and has proved itself to be an exceedingly nourishing policy. "We sell no new cars because if we sold any special make we'd naturally be classed as specialists in that brand of car. We do not specialize in any make of car. We specialize on them all, and will continue to do so."

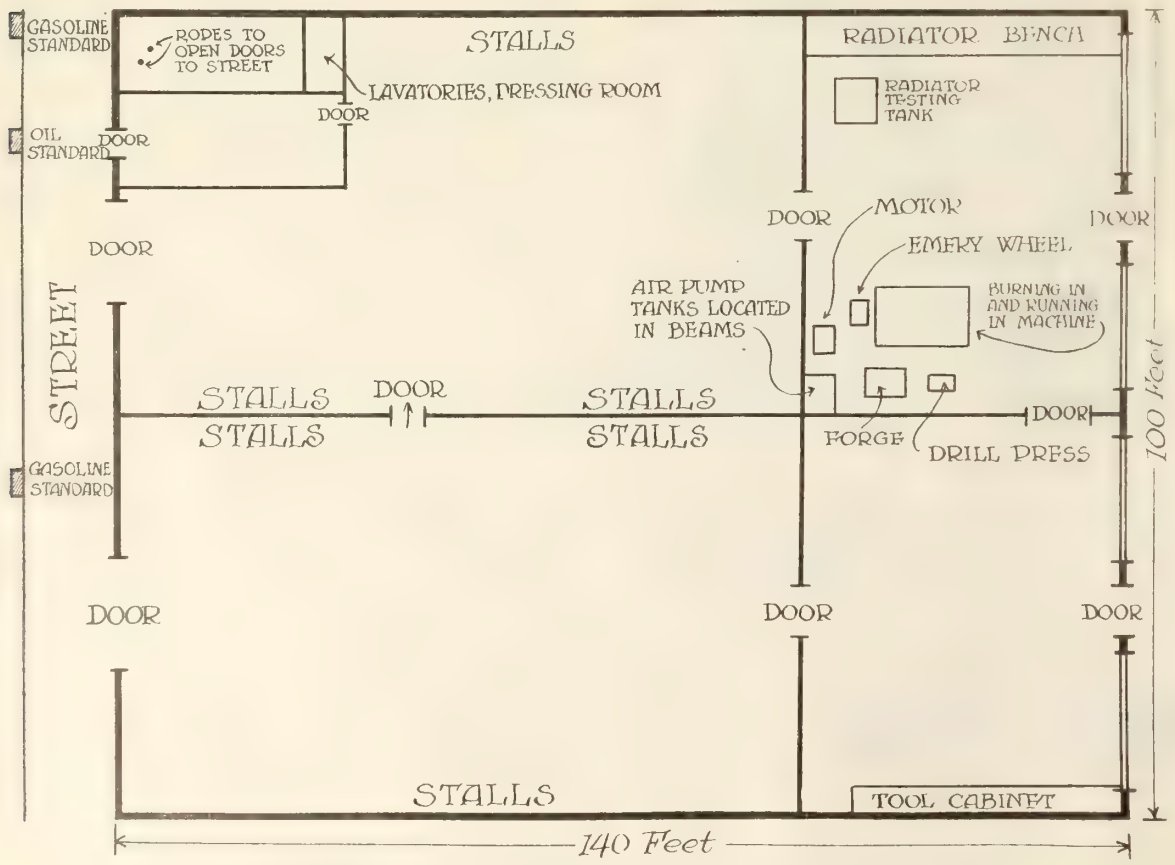
This is their creed, the creed that has built up a modern establishment with 100 feet frontage on one of the best streets in town; the creed that has filled this plant to capacity with storage and repair work, that makes it possible through a winter of almost unprecedented dullness for the proprietors and fifteen other men to be occupied to the limit of their time. They are plainly recognized as good, otherwise they wouldn't have so much work to handle, but their system has much to do with their success, and their policy has made this system possible.

In the summer months the storage curve goes down and the repair work, of course, booms. The staff therefore swells out. Last summer they had twenty-five men busy. This year they intend to have more. They say they have to. But the present state of affairs is what I examined, and I found it an interesting place to explore.

This picture shows the Franklin Garage. The building at the right is a recent addition.

The Building

In the first place, the entire building is 100 by 140 feet. A portion of the year, 28 by 100 feet is divided off into repair rooms, and the remainder, with the exception of the office, is for storage, with stalls for 40 cars, and total capacity of 105. In addition to this, 16 cars can be handled in the repair shops at one time. To the rear of the plant is the battery repair shop, a separate building fitted with more machinery than it would have appeared possible to cram into a building of twice the size. In that room 125 batteries can be charged at once. One end is taken up with the switchboard, batteries are lined along the centre, and both sides are occupied by work benches and innumerable smaller fittings dear to the heart of a repairman. To one side of the main building, again, is the old shop, in which Henderson and Brazier started, with emery stone and hacksaw, to carve out a future. This serves as a store-room.



Plan of the Franklin Garage. Notice how conveniently everything is arranged.

But to start at the street. There are two main doors, one in each building. This is because the plant was not all built at once. One building was opened in 1919, and was intended to serve for some years. Business grew. In 1920 space became crowded. They began to build. They erected another building of proportions equal to the first one, opened it in September, and now it is full. This year, or in 1922, they will most likely have to build. But they are cheerful about it.

Mysterious Doors

In front of the building are two gasoline standards and one oil standard, also water and air hose. If a man wants oil or gasoline, he stops outside; if he doesn't want it, he drives up to the door, toots his horn, the door mysteriously swings open, in two parts, and he drives in, without having to wait a second. No matter how busy the staff is, no matter how few there are, the customer drives in without a moment's delay. Therefore, right on the street there are two speed features. On each standard there is a push button. That is one feature. The other is unique.

Two ropes hang over the bookkeeper's desk in the office, which faces the street. Each of these ropes is connected with a street door. By a system of mirrors, in front of the desk, the bookkeeper is able, without even twisting his head, to see at which door the customer is waiting. When a car honks without, therefore, the bookkeeper within looks up, pulls the rope which runs along the ceiling and is connected with the street door by a system of pulleys. When the man in the office pulls the rope, the door swings open, one-half each way, and the customer drives in.

I found fault with this arrangement. It doesn't go far enough, I thought aloud. If by a system of further pulleys, you could have the door swung shut again, it would be all so nice. They, the proprietors, explained to me that this would not do—that is, in winter. For this reason.

One floorman is charged with looking after the store-room, keeping it warm, is checked up on the

(Continued on page 6)

What You Can Sell the Canadian Farmer

Study the Farm Field—It Yields Big Sales to Those Who Cultivate It Intelligently—What the Modern Farmer Buys—A Survey of His Characteristics and Needs—From An Address Before the Montreal Publicity Association

By F. M. CHAPMAN
EDITOR OF "FARMERS' MAGAZINE"

CANADIAN country life has bred the most skilful farmers, the most intelligent rural citizens, and the most engaging farm houses to be found anywhere in the whole world. This assertion is made after a most intimate study of, and association with, the average sized farms of Canada. Sprung from the best blood of a pioneering people, the Canadian farmer, owner, active manager and intelligent student of community affairs, has laid well the basis of our splendid democracy. Their sons and daughters have made their way as recognized leaders in business, in industry and in the professions. In fact their intelligence is easily comparable to that of the leading groups of citizens over all Canada.

Canada has about 4,000,000 people engaged in agriculture, the largest industry, and one that employs the most people in the whole of Canada. Roughly the last census has shown that we had more than 700,000 farms in Canada, the majority of which are man-sized farms and 89 per cent. occupied by owners. These are to be found in every province from the Atlantic to the Pacific.

The last census shows that we had in Ontario over 225,000 farmers; in Quebec 160,000; in the Maritimes 107,000; in Alberta 62,000; in Saskatchewan 97,000; in Manitoba 46,000 and in B. C. some 19,000.

I might digress to explain that these farms include all acreages from one acre up. But allowing for the farms, so-called, under eleven acres, there still remains the big percentage of 73 of farms over 50 acres, and of 86 per cent. over eleven acres, while the greatest percentage is of farms between 100 and 200 acres.

Another census is now under way. It will show in the prairie provinces an even greater growth in agriculture over these figures, as these figures were over those of the census of 1901.

It must be flattering to us as Canadians also to know that over 85 per cent. of the farmers are owners and operators, a fact that puts us away ahead of our sister republic where tenancy, especially in the middle west, is coming to be one of their big problems.

Startling, too, is the fact that the last census revealed that only 11.25 per cent. of our land was occupied. The coming immigration has to be reckoned with.

The average value of the farms of Canada in 1911 was nearly $6,000, a figure that should be corrected to something nearer $10,000 in the next revision. The total wealth of these farms figures out to the huge sum of 4¼ billions or to give an estimate in to-day's valuations, I would say that it would run around 8 billions of money.

The Kind of Man He Is

Let me correct any possible opinion that may exist as to the character of the man about whom we are immediately concerned. The farmer is a man similar in tastes, needs and ideals to the rest of humanity. He wears clothes, eats food, and sleeps in a bed. And while pioneer circumstances may have wrought out curious improvisations in these fundamental bodily requirements, the farmer who has succeeded him has changed those enforced shifts, just as the sickle has been dropped for the self-binder, the homespun for the finished worsted. The farmer to-day is a big business man and a manufacturer of finished products in many lines. He produces improved animals, seeds and fruits, and uses the most modern scientific implements as his servants. In fact, he awaits even now many new machines to put his business upon a better basis. And in this business he must have farm equipment of all kinds, while the home needs and their satisfaction have only to be seen to have our eyes opened to the wonderful improvement over even the farmer of twenty-five years ago. The best of us underrate the modern farmer. His use of machinery and manufactured goods is a revelation to every one who takes the trail to all the good farm centres. Urban people are liable to regard him as they saw him pictured years ago.

This tractor recently climbed Mount Helena, Montana, 5,462 feet in height. Only adjustment on the round trip was a slight regulation of the carburetor. It made the round trip in three hours.

If any one here doubts these statements, I would strongly advise him to make an auto tour of personal inspection over a wide range of good country, with his eyes open to see the currents of life, and I venture to say that it will be a revelation to him, both as to the intelligence of the man on the farm, and probably more so as to his buying powers, and his needs that have to be satisfied with modern goods.

In order to visualize this big field, this farm market, for our manufactured goods, let us for the sake of clearness divide our subject into three or four sections.

1st. The Farm Equipment Section.
2nd. The Home and its Furnishings.
3rd. The Personal Needs and Use.

Farm Equipment

The equipment necessary to successfully operate a modern farm is considerably more elaborate than in the pioneer days. Fewer hands on the farm mean more power to the hands that remain, so that every device and machine to lessen labor and increase the output are called into play. The farm of to-day is well-fenced with a rapidly increasing use of woven wire, steel gates and even steel posts. The importance of this feature alone is more significant when I tell you that the average 50-acre farm requires from one to two miles of fencing. The buildings, of course, demand the greatest expenditures and in them are used many thousands of dollars of staple goods.

Here the farmer must invest in lumber, shingles, cement, nails, locks, hinges, ventilators, pumps, stable equipment for cattle, horses, hogs and sheep, with litter and feed carriers, harness, and such machines as fanning mills, weigh scales, cutting boxes, root pulpers, grinders, elevators, often threshing machines, gasoline engines or electric motors, sawing machines, pulleys, belting and a multitude of minor tools.

I have visited many recently equipped farms as well as being familiar with farms and farmsteads all my life, and one would probably be surprised to learn that the average 100-acre farmer in starting anew must invest anywhere from $1,000 to $3,000 in machinery and equipment. Many an auction sale to-day will total around $2,000 for second-hand tools and machinery.

Investigations carried on by Prof. Archie Leitch, of the O.A.C., in three counties in Ontario each given to different types of agriculture, show that the farmer is a big consumer of farm machinery and of building machinery of all kinds. Almost every farmer owns some size of gasoline engine, many have two or more, while others are hitched up to wind or water if not to hydro or other electric companies.

Perhaps the manner in which the tractor has invaded small farms has been the greatest revelation of all to our business men. During 1915 and 1916 it was our privilege to urge upon the Ontario government the great impetus to production that ought to be given by way of the tractor. The idea was taken up in earnest and the results which have followed that demonstration proves the point that if the farmers are not using more machinery and modern conveniences, the fault is with the demonstrators, that is with the manufacturers themselves, for the field is a big one, waiting for many things where publicity and demonstration will put them.

I find the most serious discussion of the merits of the tractor among men with farms under 100 acres, and I personally hired a neighbor's tractor on my own farm this year which did the work much cheaper than it could have been done with horses. The farmer is a close student of this power and will continue to be a potential buyer of power machines on an ever in-

creasing scale, always of course accepting the fact that no one is going to throw the whole financial field into the reverse economically.

Take the case of the auto. So universal is its use among farmers that I scarcely need reaffirm the old facts. In the government reports it is shown that 60 per cent. of the autos are owned by farmers and under my own observation in a private investigation 66 per cent. of the farmers owned one car and in many cases two, and only about every fifth car was of the cheaper type. The Ontario Government states that about 33 per cent. of the farm owned cars are of the cheaper make.

The Ontario Government statistics in 1918 showed that out of 101,845 cars only 36,699 were owned in cities. The good roads movement is one of the incentives to a more liberal operation of farm cars an trucks for purely business reasons. In fact the way that the modern farmer has seized upon the power devices to aid him in his work and his living conditions is a revelation to those who only look at agriculture through an office window.

As I said before, we have several types of farmer. The specialist in livestock, the specialist in dairying, the specialist in fruit farming, etc. Besides there have been, recently, developments on quite an extensive scale in flax growing, in sugarbeet raising, and in tobacco culture, while fox breeding is a new livestock field into which many are thinking of making a venture.

Each of these demands especial types of machines. The fruit grower must be acquainted with sprayers, spray poisons, and fertilizers. The dairymen has to know a Babcock tester, a milking machine and a cream separator. It is because so many of these interests overlap in the same farm that the needs of the average farm are so varied and great. The farmer is indeed a scientist, an undertaker of business, a skilled manager of labor and a laborer as well. He is a business man of no small kind.

The point I wish to make is, that agriculture in Canada is carrying on a big industry steadily at almost the peak load of production. While demanding of our manufacturers the best there is of machinery and equipment for a greater and more highly organized production, the Canadian farmer is really efficient and his yearly needs are of an ever increasing volume.

Home Equipment

Let us for a few moments enter the farm homes of Canada. Apart from our current acquaintance with the pumpkin pies our mothers made, few of us really know the modern farm home.

If there is one thing that has been impressed upon me as an editor of a farm journal it is the relatively great number of inquiries about house plans, building and furnishing ideas that come to my desk.

The farmer to-day demands that his home equipment be of such a type as to insure him some of the comforts of modern life and that his family enjoy the urban advantages of lighting, heating and running water. The farmer of to-day seeks all the latest in music. His wife is not the drudge of a generation ago. She and her daughters arrange to have the afternoons free while the family are educated in college as well as the public school. Many of the homes are furnished with expensive furniture, have costly rugs on the floor, table linen and silverware of the best kind, and turn the button or the tap at will to direct their household labors.

Recently one of my assistants passed by a store in Western Ontario in front of which were piled a number of bathtubs. Inquiry revealed that there was no building boom on but that they were all going to farmers who were putting in water systems.

There is an immense field yet barely tapped in the sale of lighting, heating and water conveniences in country homes. The farmers are eager to listen to any person who will inform them about these things. That largely explains why Hydro votes in rural municipalities have been so decisive. The farmer is intensively interested in all the articles of commerce for home furnishing. In fact many a farmer has been in advance of the salesman of those particular needs and has practically offered the business to the merchant who should have been alive with the goods on exhibition. A window display in a small country village near Toronto, showing a water system for a farm home, attracted more attention from the surrounding farmers than any other display. The results were that inquiries began to come in fast.

Part Automobile is Playing in the Farm Market

The automobile has introduced into the lives of farmers many things that are having a vast influence on social and business relations. The farmer is no longer a provincial as it were. He knows things as well in the next county as he does in his own. He has moved the frontier up to his line fence and put all the country within his independent reach.

Now what does this mean? It says that the farmer is a frequent visitor to the larger centres. A trip twenty to thirty miles away occupies only an afternoon and he is thereby, along with his wife and family, put into touch with goods and opportunities not possible in his town or village centre. By no means does this imply that the local dealer is being boycotted but rather encouraged to handle the goods that the more distant one sells the farmer. He will support the local dealer if he can get what he wants He likes to be well in advance of custom or to have some new feature of home equipment to mark his progressiveness over his visitors.

Buying of automobiles on the part of the farmer is resulting in assisting the manufacturer indirectly to get distribution in the smaller centres. The dealer at the cross roads in order to hold his trade makes it a point to carry an up-to-date stock. He knows that if he does not carry the stock the farmer is going to go into the larger centres where he can get it.

How a Saskatoon Garage Sells Service

Continued from page 4

amount of coal he uses, and, being human, naturally likes to be comfortable. If the floorman was busy at the exact moment of entry by a customer, and the door swung shut after the customer, keeping everything cosy, ten to one, no matter how conscientious or hard working the floorman, the customer would wait at least a little while for attention. But when the door stays open, and the customer can't shut it, because he doesn't know how, then there is only one thing to do. That is to go and shut it. Having shut the door, the floorman is right beside the customer, and service is rendered without the possibility of delay.

If the customer enters without his car, he must do so through the office door. Therefore he cannot enter the garage and purchase anything or transact any business whatever without the office getting check on it. If the customer wants anything done, a button is pressed, a buzzer sounds, and a man from the rear comes on the scene. The entire plant is connected by means of the buzzer system.

Having come in from a long drive, and having consigned his car to the care of the floorman, the customer possibly wishes to do business downtown. Therefore, he turns to the left, where there are lavatories and tiny dressing rooms, fitted for his convenience. This has been a popular feature.

If the customer does not want to do business downtown, but decides to look around while his car is under repair, some one will show him all there is to be shown. This is considered part of the garage service to the public, and is well looked after.

Fire Precautions

First, one sees that behind every other car is a fire extinguisher. He is informed that the doors are all fireproof. The floor is of concrete, so that his feeling of security is strengthened, and the danger of fire seems to recede to the vanishing point. In addition to these precautions, the plant is equipped with a five-gallon pyrene pump. In the centre of the concrete floor is a steel trapdoor, leading into the basement. This is for convenience when the coal wagon calls. Saves much time, much work, and is generally blessed by the coal man. Incidentally it comes in handy for other things of weight that must be lowered into the basement.

It might be mentioned that the light whereby all these things may be discerned comes from huge skylights. Having much sunlight, the garage is saved from that feeling of clamminess and chill.

Passing on through, by means of a sliding door (all inside doors are sliding), we come into the repair shop, where 16 cars can be repaired at one time. Here it is busy, and in striking contrast to the peacefulness of the live storage. Skylights and huge windows flood the place with light. Along one end is the radiator bench, which is stationary. The reason this is called stationary is that every other bench in the place is not stationary, but is easily portable, and is run around on wheels just where it happens to be wanted.

Next to the radiator bench is the radiator testing tank. In straight line groups, then, are the motor, air pump (with air tanks lodged in the beams above), emery wheel, burning in and running in stand, and drill press. In the corner, as shown in the diagram, is the tool cabinet.

Office System

Having seen the repair shop, gone through the rear door and inspected the battery repair room, we feel inclined to take a look at the office system, which is made simple by the installation of a National Cash Register of the type constructed for garage use, and by the use of the Comfort Simplified Loose-Leaf System, which consists, elementarily, of two books, containing in startling conciseness, all the company's business.

Division number one of this big loose leaf book is the customer's ledger. Division number two is the general ledger. Three is purchase, four is sales and five is payroll. Other divisions are: Accessories, new cars (which are not handled at the Franklyn Garage), used cars, battery repair service, oil and gas, garage and storage, tires and tubes, parts, repairs and expenses. All these divisions are indexed with heavy sheets containing leather tabs printed in gold.

The bound book is a three-column cash book.

One man does all the office work for the firm. This, incidentally, as before stated, includes looking after the doors.

The shop and storage part of the office system is complete. Cards are used for every transaction, marked for what, with whom, by whom (every man having a number), date and character of transaction, and whether for cash or otherwise. Every man getting anything for use in his work secures it by requisition. Every piece of work turned out by the establishment is passed through the hands of both proprietors, Mr. Henderson from the office end, and Mr. Brazier from the floor superintendent's end. Thus an accurate check is kept on all stocks, work, men and receipts.

Above the office is the store-room, where accessories are kept. Along one side of the office are the display shelves. A full line of accessories is carried.

It is refreshing to visit this place of industry, where they do everything to cars except to sell them when they're new. It pretty well shatters the argument that agencies are the business and repair work the necessary side line. If these men ever were to take an agency, it would be second in importance to the repair and live storage establishments, even to the battery room, of that I am sure. They have specialized their work, systematized their business, and made such a feature of their policy that I am prone to believe nothing would induce them to depart from it. It is certain that, as far as present indications carry, they have no need to.

System is their keynote, impartiality their strong suit and enthusiasm their inseparable companion. Of such things are rulers made.

Montreal Motor Show Was Big Success

In Spite of the Fact That the Automobile Business Has Been Dull for Some Months, the Amount of Business Done and the General Results of This Year's Show Are Very Encouraging

By M.T.I. REPRESENTATIVE

THE most successful motor show that was ever staged in Montreal was held the last week of January with a total attendance that ran close to 65,000. Not only was the interest displayed by the public far above the average, but the number of exhibits of cars, trucks and accessories ran far beyond the total of the previous year.

It would be beyond the bounds of truth, and an instance of a perfervid enthusiasm, created by the actual records established by this show, to go on and announce that the business signed and sealed also created and formed a new high record. For it did not. It was impossible for any such result under the general business conditions, and the attitude of mind that still reigns among the public who are the car men's prospects, or the dealers who, in their way, are as cautious in stocking up as the public to whom they must sell the goods they stock.

What did happen was that there was a very substantial amount of business done; a very encouraging amount; that interest in cars and trucks and accessories was clearly stimulated by the publicity that the show insured, and that the exhibitors are encouraged by the sentiment that was in evidence to look forward to a steady development of orders in the near future. It is admitted that the rush of orders of this time last year cannot be expected, that it will take business some time to come back in the old volume, but on the other hand it is the general belief that this business will continue strong right through the summer, and that fall will see buying kept up beyond that of normal times.

Should Be Housed Better

The Montreal Motor Show, admirable as it was in the enterprise that lay behind it, and the collection of goods that was arranged, has obvious drawbacks in the "house" it lives in.. The worst feature of all is the entrance, far too restricted, and causing unnecessary delays to patrons. Then the three tiers of floors restrict the general outlook and lessen greatly the impressive appearance such as is given by a show held in Toronto in the huge Armories with its immense expanse of floor space stretching between two long blocks. The development of the industry will soon make it worth while for the Montreal Automobile Trade Association to arrange for new and more spacious quarters where "appearance" as a selling element will be given a better opportunity to exercise its powers.

This, however, in no wise detracts from the essential merits of the valuable exhibition of the goods, new or old, that represented the most up-to-date products of motordom. The car designs ran all the way from the Dodge, that has prided itself for many years now on the fact that it never changes, to the brand new body of the McLaughlin "Master Six," or the new light six of the Studebaker, or the first sight in Canada of the Armstrong-Siddeley with its distinctive hood pattern, or the $600 Brook that many thought a freak car, or a new type of wheel, or some of those giant rubber tires that are now being constructed for the giant motor trucks.

Perhaps if there was one outstanding feature of the show it was this: the tendency to do away with the solid tires on the five-ton trucks as well as the lighter ones, and substitute the pneumatic with all the advantages that this substitution gave to the old-time solid rubber tires on the old-time bicycles. Yes, there they were, giant tires up to 44 inches wide, and with bigger sisters stowed away home as big as 48 inches in diameter. Technical skill in their construction and courage were the elements that have brought them forth to be a permanent part of the truck business. Nearly every tire company announced themselves as branching out into the construction of these big tires, although only one had reached the four-foot limit so far. Another tire feature was the extension of the cord tire to the Ford size, a development among several tire firms.

The price question remained as it had been left with the general reductions last November.

Some New Models

The McLaughlin Motor Car Company, Limited, of Oshawa, Ont., attracted keen interest at the show with a new line comprising seven models, termed the Master Six Line for 1921. Each of these was fitted with the six-cylinder McLaughlin-Buick Master Six, valve-in-head, motor. It was chiefly in refinement in body, however, that the new model is distinguished. These include not only the radiator and hood lines but the rear of the body has been widened and provided with new crown fenders and skirts. The doors have been fitted with special outside handles and have been made much larger and securely attached on hinges of a new style and equipped with large latches and bumpers. Directly back of the seat is a large interior compartment with ample storage space for travellers' equipments. The inclined windshield is slightly wider and of a new design. The driving compartment and tonneau have been more liberally spaced, giving greater comfort to both the driver and passenger. This car is equipped with a top of special design eliminating bows and obstructions to the view and is also fitted with a gypsy curtain. Head lamps have been designed especially to correspond with the new body lines. The car comes in five-passenger touring, coupe, five-passenger sedan, seven-passenger touring, seven-passenger sedan, etc.

The Studebaker organization was reinforced this year with a new line, the "Light Six," represented by three models in the five-passenger touring, the two-passenger landau-roadster and the five-passenger sedan. The weight of the touring car has been refined to 2,500 pounds. All three are equipped with six-cylinder motors, five cord tires, connecting rods and crank shaft machined all over, and valves working at an angle of twenty degrees.

While Willys-Knight cars have been retained practically at the same basis as last year a number of new models have been brought out in the Overland. In the touring car especially is shown the gypsy top, leather upholstery and special colors, such as maroon. This has a big enamel finish and is offered at $200 more than the Standard, which is last year's model.

In sedans there is a special, with wire wheels and assorted colors and quick action window lifts. This, too, sells at $200 more than the Standard Overland. In the coupe there is a new special with a zig-zag seat, quick action window lifts, wire wheels and assorted colors.

With the proud slogan of "No Change" the Dodge car was on hand for the new year. The factory is producing about 675 cars a day, and is working steadily, except for a couple of weeks during which it was closed owing to the settling up of the estate. A new addition of $8,000,000 is being made to the factory.

One of the distinctly new lines was the Kemp Metal Auto Wheel, an effort to displace wooden wheels for cars. The invention is a Canadian one, and the project will be financed for the most part, it is understood, by an offering of stock to the public. The device is being pushed on the strength of a decline in the supply of hickory used so much in the manufacture of wheels. These are not spring wheels, but the spokes are tubular, and are firmly held by compression without threading or riveting. Almost all the parts can be produced from steel stamp.

A Bird's-eye view of a section of the Montreal Motor Show.
—Photo by Kraft Studios, Limited

An interesting exhibit at the booth of the Champion Spark Plug Company, of Toledo, Ohio, was what is termed their "merchandiser." This consists of a cabinet 31 inches long, 15 inches high and 11 inches deep, which is supplied to dealers with an assorted order of plugs and insulators. All the various sizes are arranged methodically in different columns and covering this cabinet on the inside is a chart, making it very convenient for the salesmen. The outside of this merchandising device shows as a three-sided cabinet including an attractive advertisement of the Champion lines. With the aid of the chart the proper type can be chosen in an instant for the customer while the division of the various types, each one in its place, enables the salesman to save a good deal of time and at the same time to know exactly what stock he has on hand. This "merchandiser" is, moreover, a constant reminder to customers of their needs and may be placed on the counter or arranged on the wall space back of the counter. It holds a large assorted stock and at the same time occupies very little space.

The Implement Dealer's Place in the Sun

Getting a Grasp of the Duties and Responsibilities of the New Order of Implement Agents

By R. S. WILLIAMS

YOU are an implement agent. You open up your place of business in the morning, sweep out and dust off your desk. Then you take up the day's work as it comes to you. You count yourself a good business man, and doubtless you are. Quite likely you are making money and in a fair way to business success, but suppose you were asked to define your status in the community. How would you differentiate your position from that of the hardware man, the grocer, or the grain buyer?

Have you ever stopped to sum up the real distinction you possess in your town? Has it ever occurred to you that you occupy a peculiar position?

You are the connecting link between the country and the town because you are the only business man that sells to the farmer and no one else. Of course, if you sell hardware you might take exception to that statement, but so far as your implement business is concerned you are an exclusive purveyor to the farmer. The grocer sells to both town and country—the shoe man likewise—even the banker, who is considered to be the primary influence with the farmer, also has a city clientele. Besides, the banker is by nature and of necessity extremely conservative. He is apt to view every move from the single standpoint of dollars and cents, and he is likely to be reactionary on many untried but logical and promising projects. Philanthropy is not in his line.

As an implement agent you occupy a position that affords you a wonderful opportunity to capitalize your influence if you understand what it is and will just make that influence felt where it will do the most good. First, however, you must obtain a clear understanding of the means by which you can gain the confidence of your trade along lines not bearing directly on the implement industry. As an exclusive dealer with the farm trade you can do more than any other one business man to co-ordinate the interests of town and country. Community building is the new term for the old and unfinished task of eradicating the imaginary and unnecessary line dividing the town from the country. This line is commonly referred to as the "city limits."

How well I remember how we used to drive into town—five of us in a two-seated surrey behind old "Bonnie" and "Spot," with "Kim," the smiling collie, bounding back and forth alongside. As we approached the city limits (that imaginary boundary which separated the mere farmers from the sacred precincts of the town) mother, bless her gray hairs, would smooth out the wrinkles in her coat, adjust the "lap robe," straighten her "bunnit," and say to us children, "Now sit up right straight, because we are getting into town." And father would knock the ashes out of his pipe, take out the whip and hit old "Bonnie" a smart clip on the off shoulder, saying the while, "Step up there and show what you can do"—and we would go sailing into town with steam up and colors flying.

One time I remember I questioned my mother—"Why do we have to sit up so straight going into town? Aren't town people just like us? Uncle Clarence lives in town and he looks just like we do."

And mother replied: "Why, of course, they are just like us, but, you see—they live in town."

And although this inconclusive answer did not satisfy me, it seemed sufficient for the deportment of the grown-ups.

Changed Attitude of the Farmer

Yes, those days are passing with the coming of the automobile, and while there is no longer the city distain and patronage of the farmer that there once was, something else has come to take its place—something even less tangible—something more difficult to get hold of and eradicate. And as the farmer has grown in importance and gained financial independence he has developed an unreasoning suspicion of the city and its inhabitants. This feeling is founded on the old days when "caveat emptor" (let the buyer beware) ruled all business transactions. As the farmer has grown affluent he has grown cold. He has acquired the idea (justly sometimes), that he was being exploited by the town merchant. He feels that he is contributing to the support of a dozen men who do nothing for him. He forgets the progress he has made—forgets the high prices he is getting for his products—forgets how much better off he is now than in the old days when he burned ear corn in the cook stove because he was too poor to buy coal—and he forgets to give the town due credit for the part it has played in helping him attain his present high estate.

It has provided him with a market through which he is enabled to dispose of his crops at high prices. The shoe man, the hardware man, the grocer, the implement agent, and the lumber man have made it possible for him to devote his entire time and attention to the profitable occupation of raising and marketing farm produce instead of spending half his time building his own tools, cobbling his own shoes, weaving his own clothing, and hewing out his own fence rails. It is largely due to the town that his land is worth $225 an acre to-day instead of the $5 or $10 that he paid for it years ago.

But as his fortune increases he forgets these details and through forgetting the one and exaggerating the other he becomes possessed with an unreasoning jealousy of the town which largely explains the big dividends the mail order houses pay on their stock. The fact that the farmer's conclusions and jealousies are erroneous and wholly without foundation makes it not a whit less serious for the town merchant. In many live little towns they are beginning to realize this fully and are organizing community-building clubs.

Where the Implement Agent Comes in

There is not a business man in town who is better entitled to head such work than the implement agent. More than any other city man he is constantly in touch with the farm trade. Of necessity and as a matter of business, he is familiar with the crop outlook, with farm conditions, farm loans, and is more competent to pass on questions affecting the town and country alike. He must realize this position and step to the front.

These efforts are worth while. The effect of those already made is being felt all over the Dominion. Towns big and little are falling in line, and who is better fitted to head the procession in any particular locality than the implement agent?

Nobody knows better the prejudices and suspicions to be overcome. The implement agent is the logical man to originate and engineer all short courses, tractor schools, farm institutes, alfalfa clubs and pig clubs. In co-operation with the townspeople, he can work for the betterment of both town and country and for the better mutual understanding of all.

But he must cultivate the qualities of leadership, and before anything else is attempted he must put his own business in order. In addition to being a first-class business man in all his dealings with his trade, he must cultivate courtesy and promptness—two qualities that cannot be overemphasized in dealing with country trade.

The late Richard W. Sears, of Sears, Roebuck & Company, said that whenever the merchants in any particular town were real business men and made an effort to give genuine service to their customers, the mail order house had no show at all. The whole appeal of the mail order house is based on low prices and the psychological fact that people like to send away. Any good merchant can offset those appeals by a live personality and enthusiastic salesmanship.

There are not many left, but occasionally we run across a storekeeper something like the hardware man of whom the following story is told: It was after supper, near closing time, and he and a crony were seated in the back of the store almost hidden from view. A young girl came in and stood near the showcase in front of the room. She looked about for the proprietor, tapping the case with a coin in a timid sort of way. The visitor finally spoke up and said, "There's a customer waiting," to which the proprietor replied, "Sh, keep still, she'll go out in a minute." Tactics like that and others of a similar nature make easy picking for the mail order houses.

Cultivate "Good Will"

Don't compel a customer to hunt you up to spend his money—be on deck with a smile and a pleasing word, make him feel that you are interested in him and eager to be of service. Keep a neat, clean store. Whether your store and sample room be large or small, make it a pleasing place to look at and to be in. A cluttered up, cheerless storeroom is a forbidding place and advertises its owner as careless, shiftless and not interested in his business, his customers, or his town. Keep your sample machines shined up and in smooth working order. Lean on the broom at frequent intervals. If possible, provide a table with clean, new advertising literature and catalogs thereon and a few chairs scattered about so that tired women and children can sit down. Too many imple-

Occasionally we hear of a tractor doing an unusual or novel stunt. This Case tractor is being used by an implement dealer to move a frame building. Truly the adaptability of the tractor is practically limitless.

ment agents' places of business look and smell like the breaking up of a weekly poker club. The average woman feels about as much at home there as she would tending bar. Don't forget that the women and their opinions play a big part on the sales side of your business. You can and should arrange your store and sample room so that it is inviting and attractive to your feminine clientele.

Where space will permit, nothing pays any better than to devote a small corner of your sample room to a sort of ladies' rest room, railed in with a brass rail, a grass rug on the floor, a table in the centre surrounded by easy chairs, and opening off of it a ladies' toilet. This may sound too much like philanthropy, but upon careful analysis and investigation it will prove itself to be merely good business. The big city department store devotes half of one whole floor to a ladies' rest room, and every device known for catering to the women's comfort is at hand for instant use. Not always has an agent space for such an outlay, but when he does it will pay big returns in good will —and good will makes itself apparent on the ledger.

Show your interest in young farmers just starting on their own farms. The newly married farm couples should be catered to in a cordial business-like way. They are the future pillars of the countryside and will play a large part in your business success. One man watches his local paper and when a farm wedding is announced he writes the young couple a friendly letter of congratulation and cordially invites them to call and see him at any time. This costs the dealer but a few minutes of time and a two-cent stamp, but the returns frequently run away up in the hundreds of dollars. Good will is one of the most powerful factors in the success of any business. It can be secured only by giving prompt, courteous service and showing a cordial, friendly interest in every man, woman and child in the community.

Young farmers frequently need credit. They are just starting, and unless backed by a wealthy parent they have to cut the corners pretty close the first few years. Here is where the implement agent can dig himself in solid by extending credit of the right kind. After you have satisfied yourself as to the inherent honesty and sincerity of purpose of the young farmer, help him to a flying start by giving him a little extra credit and a little longer terms. You are not taking much chance when you do this with a good-intentioned, well brought up young fellow, but he will appreciate it in more ways than one and will never forget the good turn you did him. It is said that the voice of a satisfied customer is the merchant's best advertisement. There is nothing better for a business than a few personal boosters scattered about the country. They praise your goodfellowship as well as your good machines.

Boost Good Roads

As the community link between the town and the country, you can do much to help further the good roads movement. Good country roads are still badly needed, especially in those provinces that have a preponderance of excellent farm country and very little natural stone or road-making material. Good roads mean closer contact and more frequent business and social intercourse between town and country. Good roads mean less mail orders and more home buying, because when it is always easy to get to town there is not the temptation to "send away." Good roads increase the value of farm land, and rich farmers always buy more implements than poor ones. If the good roads agitation is started in your community, help it along. If it is not, and your roads could be improved, start a little of this agitation on your own hook.

You can be of great assistance to your farmer customers in the matter of seed. In many localities there is a difference of opinion as to the best seed to plant, and frequently there is a great deal of imported seed used. In the capacity of the city merchant who deals exclusively with the farmers, you can soon become recognized as a seed and crop expert if you will put forth the effort to study and learn. Frequently the implement agent handles various kinds of seed, and such a man should, as a matter of course, be equipped to give his customers expert advice as to their requirements.

Soils, seed bed and agronomy should be subjects of your earnest investigation. Farmers are not half so well-informed about their own business as they frequently are given credit for. What is more, they will take advice from you or any well-known friend quicker than they will from an outsider or a Government bulletin. You can help your trade to bigger and more profitable crops. You can increase the crop yields in your territory if you will do it—and for every added bushel of grain raised in your community you reap a direct financial profit because of the increased buying power of your customers.

You see, your duty as an implement agent and a business man does not end with sweeping out in the morning and selling a manure spreader to the man who wants one. It will profit you more to tell the man who buys a spreader that manure left to lay around in piles soon loses fifty per cent. of its fertilizing value. Chances are he doesn't know this, and if you give him something of real value both in the way of machine and helpful advice, he cannot fail to be impressed—and his neighbor who is thinking of buying a spreader will hear of it.

It is said that if a thing is worth doing it is worth doing well, and there is a vast difference between running an implement business on an intelligent, business-like basis and just simply letting it run along. Run the business—don't let the business run you. Help to better your community. Bring the city elements and the country elements in closer communion. Help to merge the conflicting desires and unreasoning prejudices of both until the hot fires of civic pride bring to the surface the universal desire for better homes, better schools and better appreciation of the real aims of life.

The Readjustment Process

When Will Present Readjustments Be Completed and a Stable Basis for Business Re-established?

By FRANCIS H. SISSON, Vice-President of Guarantee Trust Co., New York

THE question uppermost in the minds of all business men at this time is "When will present readjustments be completed and a stable basis for business re-established?"

While, of course, years must elapse before the tremendous amount of life and property destroyed in the war can be fully replaced and the political and social problems it has created can be solved, there is ample ground for believing that we shall reach a relatively stable condition in this country in the very near future. We have undoubtedly passed through the most critical of our post-war readjustments, although many more must yet be made. And any answer to the question that I have quoted is contingent upon the length of time it takes to effect the remaining necessary readjustments.

I refer especially to the readjustment of retail prices to declining wholesale prices and the readjustment of the costs of production to present purchasing power. These necessary readjustments have been tardily started, as was to be expected, but they are now under way, fortunately, and will be completed gradually but with ever accelerating speed. The sooner they are accomplished, with a minimum of distress, the sooner we will reach a comparatively stable business basis, but we cannot reach that basis until they are finished.

The adjustment of production costs will involve, and, in fact, will consist, chiefly of wage adjustments, although increased efficiency and decreased margins of profits must also play their part. As wages generally are reduced, of course, there will be curtailed purchasing power, but it should be remembered that decreased costs of production will lower commodity prices which will ultimately offset the reduced buying capacity of the public. The laborers who profited most from ever-soaring wages during the war and for some time after will feel the curtailment first and most, but they should be in a better position to bear it than their less fortunate fellow-workers. Those wage-earners and salaried workers whose incomes were little affected during the last five years and who suffered most from inflated prices will be afforded an increasing measure of relief from now on.

So there are compensating factors in the situation, deplorable as it is that some members of our body politic must always be penalized in periods of inflation and others be distressed in periods of deflation. That is only one of the many reasons why all of us at times would like "to mould the universe more to the heart's desire."

The Pendulum Swinging Back

The curtailment of production which inevitably accompanies such industrial readjustments as we are now experiencing, however, will finally prove its own corrective. We are not in the throes of over-production, but merely temporary under-consumption. And it is significant, in this connection, to note that when goods are offered for sale at retail prices which the public believes to be fairly commensurate with prevailing wholesale prices and costs of production they are eagerly bought. Despite the materially lessened purchasing power in agricultural sections, occasioned by the precipitate decline in the price of farm products, and in certain industrial sections, because of closed plants or the part-time operation of factories and reductions in wages, there is still a tremendous buying power in the country and always will be. When purchasing is resumed on a large scale it will be all the keener by reason of the delay and the deficits in present commodity stocks. Thus, the existing situation is even now devising its own corrective, and the pendulum of business activity which has now swung to the two extremes of its arc is already returning to the mean of that arc. As a consequence of this movement, those commodity prices that have sagged too low will rectify themselves while the prices that have soared too high will reach their true level. And wages, which should not be considered in the light of money values but rather in that of purchasing power, will be more equitably adjusted on a sounder economic basis than at present—which will be as beneficial to labor, in the end, as to the whole business community. Wages cannot be sustained on an uneconomic basis any more than can farm products or any other commodities. All necessary liquidations must run their course, and the sooner and franker we face that fact and discount its inescapable consequences the better off we shall be.

The producers and merchants who persist in holding their goods for prices that the public will not pay are courting disaster and preparing to swell the number of commercial failures. They have not learned the elemental rule of successful merchandising that profits come from turning over capital. They are endeavoring to ignore the inexorable law of supply and demand. They are trying to shape business to their liking in ignorance, apparently, that practically every business to-day is directly or indirectly affected by world conditions that no individual or nation can control.

The Bank's Duty

The present world situation is admittedly a difficult one. The banks are as much concerned as any branch of business in finding a solution for these problems and are committed by self-interest to the support of any safe policies that will aid in creating better conditions. All that should be asked of the banks is that they "carry on" with prudence and contribute their best efforts under these trying conditions. It would not help at all to adopt unsound banking practices during a term of stress. It would merely add to any dangers that already exist.

Since the armistice, the minds of men in all parts of our country have had time to comprehend the course of events and the meaning and needs of the present critical period. As with the war itself, full realization of the serious problems of peace has been slow in spreading among the people. It is by no means universal now. Leaders do exist, however, and others with the international outlook will no doubt be effective in stimulating the action that seems to be required. There are evidences of clear recognition of the demands of the situation in many quarters.

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How Does the Farmer Stand?

THERE is a general impression abroad just now that the Canadian farmer in the matter of cashing in on his 1920 crop "has drawn a blank." Some people would even have us believe that practically everything the farmer produced last year cost him more than he can get for it at current prices.

If this is true, as one journal has it, it is impossible to see how the farmer ever has made any money on his farming operations. But what are the facts?

Canada last year reaped the most valuable harvest in her history. The Dominion Bureau of Statistics has issued a report covering the area, yield, quantity and value of Canada's field crop for 1920, which is very encouraging indeed. The report covers the period to the end of November, 1920.

The total yield of wheat, the report shows, as compared with 1919 is as follows: 1920—263,189,000 bushels, from 18,232,374 acres; 1919—193,260,400 bushels, from 19,125,968 acres. The increased yield 1920 was 69,928,600 bushels from a decreased acreage of 893,594. The average yield per acre is 14½ bushels in 1920 as against 10 bushels in 1919. The Government gives the total value of Canadian field crops for 1920 as $1,636,664,900, as compared with $1,452,-437,500 in 1919, **even allowing for the decrease in price.**

This means that the purchasing power of the Canadian farmer, far from being less this year than last, is greater by $184,227,400. The decrease in price, which has been made much of, has apparently been taken care of by the increase in yield.

We have taken the trouble to ferret out these figures to convince our dealer readers that the Canadian farmer is not in a worse position, financially, this year than he was at the beginning of last year. His position is slightly better—even though we take into account the fact that the price of wheat has gone down slightly since the foregoing figures were compiled and that a percentage of the yield has yet to be sold, and will most likely be sold at the lower rate.

Then, again, the dealer should not lose sight of the fact that the Wheat Board paid out last year over $55,000,000 on the farmer's 1919 wheat participation certificates.

Taking all these things into consideration the farmer is by no means financially embarrassed.

The dealer, armed with these facts, should go forth to sell and feel sure of his ground. The farmer needs modern equipment now more than ever he did. He is faced with keener competition and has an almost impossible task to get labor. This competition will grow fiercer as time goes on and farm labor—if we are to believe the present indications—will become scarcer. Modern machinery is the farmer's standby. It has been used heretofore in many quarters as an auxiliary or reinforcement. It has now practically become a necessity.

If things have changed for the farmer they have also changed for the dealer. The time has passed when the dealer could sit down and take orders. He has now got to sell! He must arm himself with all the facts relating to his goods. He must know their construction, functions, operation and capacity. A careful and intelligent study of his prospect's conditions and requirements is a fixed necessity. As M. T. I. has pointed out time and again, unless a dealer takes the trouble to understand all about his entire line and is able to show where the farmer can save money by using a particular machine his chances of success are slim indeed.

However, to get back to where we began, the Canadian farmer is in as good a position and is as capable of purchasing modern equipment as ever he was. The live dealer who goes after the business equipped in the right way has every prospect of a big and successful year. He will not be easily discouraged and will always have a "come back" to meet a difficult situation, if he is familiar with his prospect's conditions, if he knows his own lines thoroughly, sells nothing but first-class goods and gives good and honest service.

Farm Lighting Plants

ELECTRIC farm lighting plants are being sold in large numbers in rural communities, says the Implement and Tractor Trade Journal. Most of the selling has been done by specialty men, rather than the regularly established farm equipment dealer. In nearly every town in progressive agricultural communities there is one or more electric specialty stores with an active, on-the-road sales and service staff. By specializing on this line they have managed to develop an attractive volume of sales.

Despite the prevalence of the specialty establishments, however, a number of long established farm equipment firms have taken on the electric farm light plant and accessories with notable success. Perhaps the chief objection the farm equipment dealer has to handling the line is the fact that any respectable results are contingent upon the introduction of a new specialty department in order to build this line of business properly.

It is agreed that no dealer can expect to succeed in selling and "servicing" farm electric lighting plants unless he has a distinct department devoted to this branch of his business. This means considerable initial expense and one more department to look after. A good many dealers do not care to handle these plants and their accessories on account of the extra effort required. They feel that they have enough to do as their establishments are already organized, which, indeed, is often the case.

Nevertheless, the electric farm lighting plant is certainly "farm equipment." However highly specialized it may be, it rightfully belongs in the stock of the full-line farm equipment dealer. If he chooses to leave electric farm lighting plants out, it is both possible and probable that he has enough left to keep himself and his sales and service force busy. Just the same, he is giving up an opportunity for increasing his volume extensively and profitably, and in no small degree weakening his position as a "full-line farm equipment dealer."

The retail implement and tractor men who have taken on the sale of electric farm lighting plants, for the most part, are enthusiastic over their achievements and prospects. They know that it means a rather long campaign for business, but that once the business is started it is very productive of more business. The after-sales, following the sale of a farm lighting plant, quickly run into big and profitable volume. But the business must be made a department in charge of men especially equipped to push it.

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Difficulties in the Way?

DIFFICULTIES are things that reveal the true man. They bring out the best or the worst that is in us. By the sting of their lash we are spurred on to greater endeavor, which leads to success, or are whipped like curs to despair, defeat and obscurity. During this period of reconstruction there are difficulties in the way, but they are by no means insurmountable. The whip is being laid on our business shoulders.

To what effect?

Automobile and power farming dealers, you who have something to sell and find the buyers reluctant, what do you propose to do? Are you going to remain under the lash of the so-called "buyers' strike," or are you out and about your business of selling with never a thought of difficulties or hard times?

There is no buyers' strike. There never was. But, and here is the root of the whole matter, the buyer is waiting for you to "show him." He is not coming to you, as he did in 1919 and 1920 begging for goods, but is waiting for you to go to him and convince him that you have something to sell which he can use to advantage.

Your motto could well be this year, "What can I sell my customer that will make him greater profits?" and not, "What can I sell my customer that will make more profits for myself?" Utility should be the keynote of your sales. Sell to reduce cost of production. If you can show a man where he will save money by the use of a certain machine he is likely to buy. This involves a study and analysis of each prospect.

The automobile and implement dealers who sell to the farmer should make it their business to gather information about the standing of their prospects, the conditions under which they work, the nature of the soil, the kind of crops they grow; are they general farmers or do they specialize, etc., etc. Furnished with this information the dealer is in a good position to determine the requirements of each of his prospects.

The dealer who is determined to overcome all difficulties will make such an analysis. He will get to know every condition under which his prospect labors and will be able to help him. And by helping him he will be in a fair way to increasing his own business along sure and steady lines.

Pessimists, Beware!

THERE are lots of pessimists this year, and strange to say, this is a year when it is "death to the pessimists." It is a strange twist in human nature that leads some of us to consume our vital energies in pessimism and fear just at the moment when all the energy and nervous force we possess is required.

Let's throw away our fears and tackle the situation like real men. There is so much business to be done we can't afford to waste our time in speculating on the size of our bump of trouble.

The two motor shows just held at Montreal and London, Ont., showed that the spirit of the automotive industry is optimistic. So far as the industry is concerned there are no difficulties in the way which cannot be overcome. The results of the shows justify this optimism. Elsewhere in this issue we publish reports of both of these shows which should convince the most pessimistic that business has again started on the upward grade and that spring will see something approaching normal conditions.

Service and Good Will

IT IS not so much the amount of service that is given which makes for good will as it is the spirit in which the service is rendered and the preparedness upon the part of the dealer to give service.

The man who has regard for the psychological effect of what he does for his customers will not emphasize the fact that what he is doing is being done as a favor, but that it is being done as something he is glad and willing to do to help out his customer. Grudging service makes no friends. It is as valueless for building up good will as giving no service at all.

There is always a percentage of service the dealer has to give free—according to present custom in the power farming industry—if this service is given as freely and cheerfully as is the handshake at the door when a deal has been put through, the farmer will appreciate it and recognize the dealer as a genuine good fellow.

The New Lauson Three Plow Tractor

THE John Lauson Mfg. Company announce a smaller size three plow Lauson tractor. The new high powered Lauson 12-25 is a machine built for the every-day farmer. It develops 30 h.p. at the belt and 20 h.p. at the draw-bar, and weighs 4,500 pounds. It has a wide range of speed for belt work and plowing. Plowing speed from 2 to 3¼ miles per hour.

The general design of the new machine is the same as the larger size 15-30 Lauson tractor.

Twenty-three Hyatt and Timken roller and ball bearings give the 12-25 the same movement as the Lauson 15-30 size. This construction reduces friction to the minimum and increases horse-power at the belt pulley and draw-bar. All gears, including the final driving gears, are enclosed in dust-proof housing and operate in a bath of oil.

The engine used is a four cylinder, valve in head type. The crankshaft is of extremely large diameter and the connecting rod bearings of special design, poured into the rods, are used. Equal distribution of pressure over full width of bearing, retaining round bearings. A pressure oiling system is used which is automatically controlled for light and heavy loads. This prevents excess oiling, the makers say, on light loads and under lubrication on heavy loads. The crankshaft is drilled with a 7-16 in. hole from end to end, giving an oiling channel of large diameter. Leads to connecting rod bearings are so placed that lubricant is not working against bearing pressures. Breathing is accomplished through eight tubes enclosing push rods, thus maintaining equal pressure in crankcase and valve cover and providing a fog of oil for the valve mechanism.

A Taco ball bearing governor is used. This type of governor is enclosed in dust-proof housing and is automatically oiled from the engine crankcase. The throttle valve, which is a part of the governor installation, is mounted on ball bearings. This construction, it is claimed, assures a throttle valve that will maintain permanent accuracy. One of the big advantages of the Taco governor for tractor use is the wide range of speed variation that can be obtained. A tractor is used for a variety of belt work necessitating a governor that will permit the motor to operate at different speeds.

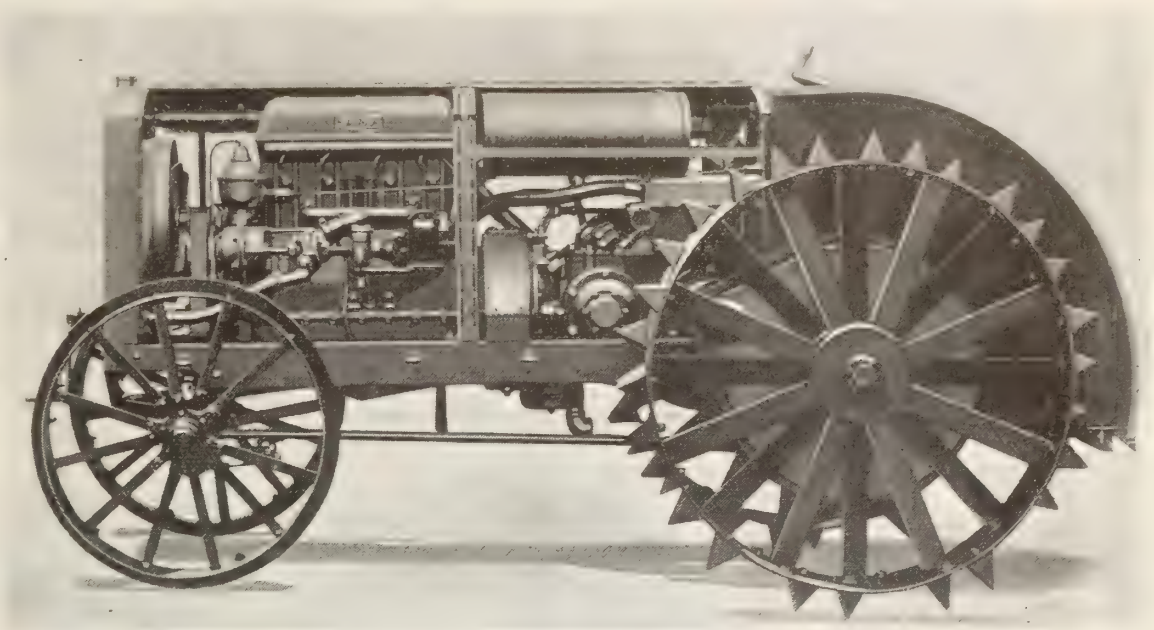
The Taco siphon air washer used has no moving parts, such as floats, which stick when a tractor is working on a sidehill. No cloth or screen is used to become clogged with dust and dirt. It gets the light as well as heavier dirt particles. There is an unrestricted air passage.

For the cooling system a cellular radiator of ample size is used. A fan plays on the radiator and a rotary water pump keeps the water circulating.

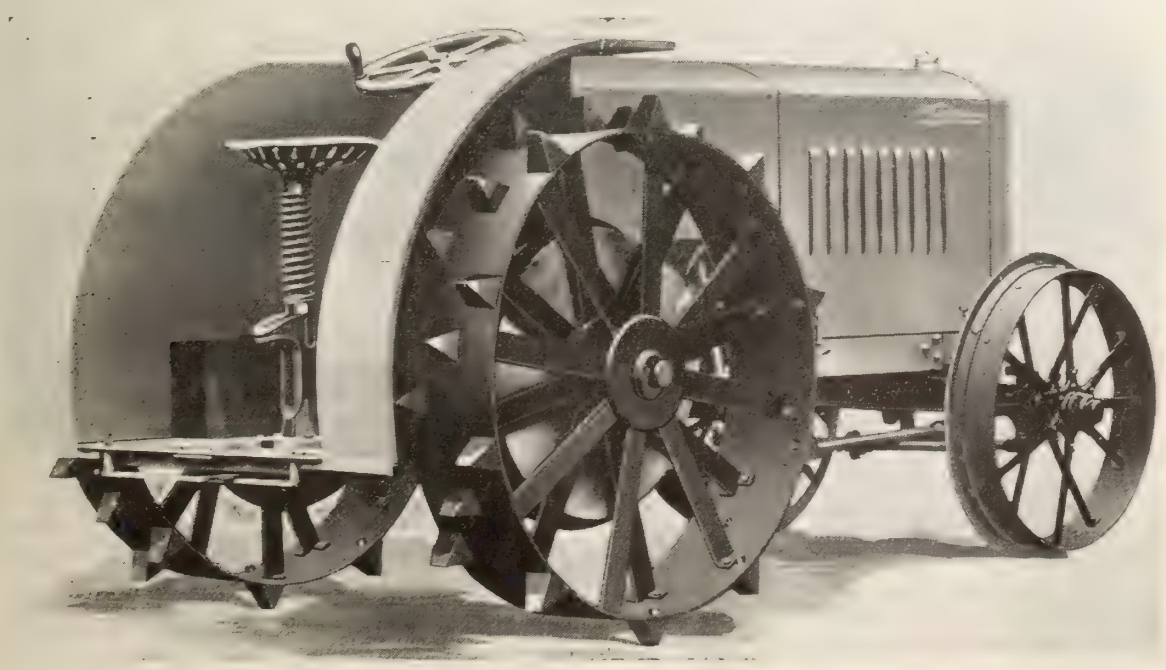
The clutch is the self equalizing, internal expansion type. It is enclosed in bell housing, yet is accessible for quick adjustment. The transmission is of the selective type, sliding gear enclosed in dust-proof housing, with all working parts running in oil. Heat treated steel gears are mounted on splined shafts, which run in Hyatt roller bearings. Belt pulley used is 16 x 7 in. At normal engine speed the belt pulley runs at 630 r.p.m. Speed can be regulated from the operator's seat. Practically any belt speed desired can be obtained.

The tractor has a low plowing speed of from 2 to 2½ miles per hour and a high plowing speed of from 2¾ to 3¾ miles per hour. This gives the owner the choice of running at any speed within reason. The operating platform is spacious and equipped with adjustable spring seat. Dual foot brakes are provided, which enables the user to lock either driving wheel, permitting short turns at the end of field. Clutch and shifting levers are conveniently located. Engine speed and spark controlled from driver's seat.

The tractor is provided with a stationary and swinging draw-bar, which permits obtaining the correct hitch on any type of field implements.



Lauson Tractor, showing engine and working parts.



The Lauson 12-25 develops 30 h.p. at the belt and 20 h.p. at the draw-bar.

Automotive Dealer Should Sell Garages

By G. R. DONALDSON

DO you serve your customers by showing them that they should house their car in a properly built garage, away from other buildings? It is not true service to them to neglect this and sell only those things which are commonly classed as accessories. There are so many reasons why you should push the sale of garages and complete the service you can offer.

Too many dealers in automotive equipment concentrate on one or two lines. The dealer who will win out with permanent and bigger business in the years to come is the one who equips his shop—and equips his staff—to serve his territory in every way. A car dealer who does not give service of some kind is rare.

Automobile manufacturers have realized the need for service and demand this before giving valuable sales franchises to dealers. The investment necessary to give proper mechanical service is seldom justified if only cars are sold. For this reason hundreds of dealers are taking on trucks, tractors, farm lighting outfits as well as stationary engines. This automotive equipment can be serviced mechanically with practically the same equipment.

Dealers who see this vision see also that they must round out their service so that it takes in everything which the purchaser of automotive equipment requires. Not the least important of those things which the purchaser of a car or truck should have is a garage.

"Selling expense" is an important factor in any line but it is a secondary consideration to those dealers who will control the big business of to-morrow. They realize that "service" is much more important. On either point, however, dealers are serving their own best interests by showing their customers the need for private garages.

The car owner needs a private garage for a number of good reasons. A car can only be as valuable as possible when it is convenient and a private garage can be erected close to his home, and a few seconds' walk gives him the use of his car. How often will a man neglect to use his car to the fullest when it means a long walk to the garage.

Both the car and truck owner can be protected from fire hazard and depreciation to their machines. Fire risk is very real when barn, shed or public building is used. The depreciation comes in damage to the high finish on a car when exposed to the weather or, as too often happens, to the ammonia fumes of manure. There is also the satisfaction of having a neat little garage as an addition to any property, to the safety from theft of spare tires, tools and other accessories.

To-day a number of nationally known manufacturers, as well as smaller concerns throughout the country, are making satisfactory garages. Most of these firms are glad to have dealers in automotive equipment sell garages and they offer a profit that makes such sales an attractive proposition.

Some garages come "knocked-down." These can be easily erected by almost anyone in a very short time. All necessary equipment is included and the finished job is neat and improves any home.

Complete the service you offer customers. Show them why they should house their car or truck properly.

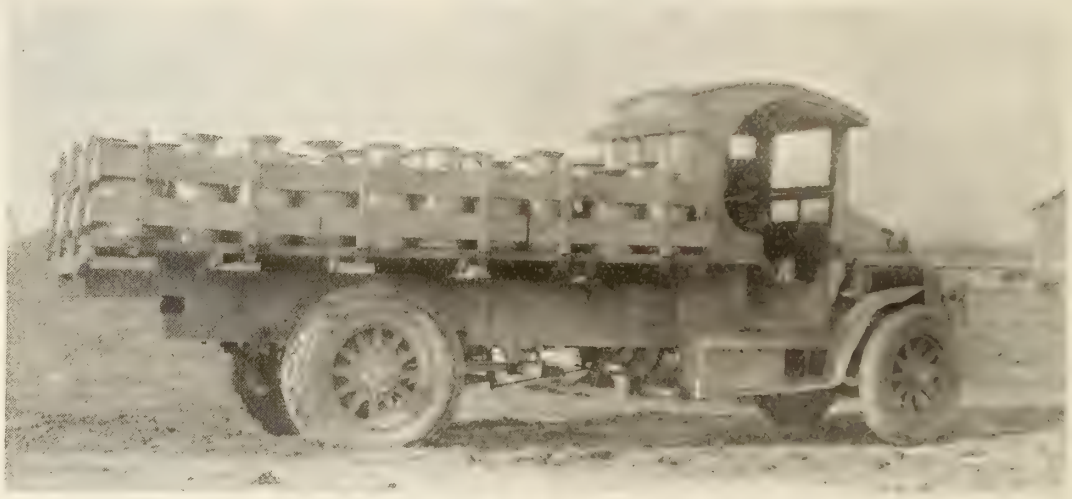
Sane, Unbiased Judgment in Selling Trucks

Don't Let Your Desire for Greater Profit Blind You to Your Customer's Real Needs—Build Well and Ensure Permanent Future Business by Blending Level Judgment With Enthusiasm

By D. R. COWAN, M.A.

SAND in a hurry, please, gentlemen! We need it in no uncertain quantity on this toboggan slide we've struck. It's time to stop slipping back and begin to climb. And if we are going to avoid another slide in the business of selling motor equipment, sand must be laid in advance and must be of good quality.

The sand to which reference is made is earnestness and determination to be honest with the purchaser or prospective purchaser of trucks or truck equipment. The determination to sell for the sake of selling should be diluted with the determination not to oversell, or not sell at all according to the particular circumstances of the case in question. Your business is not going to last very long if you sell trucks where they are not needed. Recently the sales manager of a large truck agency in Toronto made the statement that over eighty per cent. of the truck sales in the next ten years would be to farmers and that the farming industry will be completely motorized. If this gentleman does not admit that he made a grossly exaggerated statement and is really planning his business with a view to selling trucks to the farming community on such a tremendous scale he will end in bankruptcy. The naked truth is that those farmers who have found trucks to be economical on their farms are going to buy new trucks as they require them. And many another farmer is going to study his farm lay-out and the volume and character of his production and marketing in order to decide whether an investment in a truck would be economical or not. Some will decide in favor and others will decide against it, because the investment in a truck is very large in proportion to the average investment in a farm, and the truck will be a loss if it cannot be used steadily and loaded to capacity during most of the year. The average general farmer cannot use a truck economically, so give him a square deal and your own business a boost by telling him the truth. You will find that there are many fruit farmers, vegetable farmers, dairy farmers and persons specializing in delivery work in rural districts who require small trucks, and well-directed sales effort will be towards them and not the general farming districts.



A typical truck equipped with pneumatic tires to be seen on the modern Canadian farm. Trucks are particularly suitable for hauling milk and other dairy products.

Care in Recommending Equipment

The above instance is only one of many in which "sand" is required. Another may be found in the sale of pneumatic and solid truck tires. The tendency on the part of an agent is to sell pneumatics rather than solids, because they cost more money and therefore bring him greater monetary returns. The agent who persists in this practice is going to injure his own business and the motor industry just as much as the agent who sells trucks when and where they are not required. Proof of this statement came home to one agent not very long ago. Here is what happened:

Last fall a man hauling milk from a district particularly noted for its rough, rutty roads, decided that his job warranted the use of a truck. He shopped around until he finally settled on a certain make—a two-tonner. The demonstration truck had 40x8 pneumatics on the rear and 36x6 pneumatics on the front. Mr. Buyer balked and kicked because he wanted solids. But finally he gave in when the agent told him that the tires were four inches thick and would not puncture, were guaranteed to "eat up" hard, rutty roads, and were, in fact, specially made to do that thing; that they would go into snow higher than the cab and then pull the fully loaded truck out without even leaving a hole in the snow.

The first fifteen hundred miles passed with no damage done, but during the next thousand miles more than enough happened. Rain came on the rough roads that had partially smoothed down after a summer's traffic on them. Snow followed the rain. Then the roads that had again cut up badly during the rain and snow commenced to freeze. The large pneumatic cord truck tires would not fit the narrow ruts, and instead were forced to ride the sharp, icy edges. After twenty-five hundred miles the result was that the inside of each rear tire had been so badly scraped and torn that all the cords of the first and second plies were exposed.

The owner was more than angry—he was mad—mad clean through. And he was going to find the agent who sold him the truck. Why? Because the agent recommended pneumatic tires when they were not suitable for the service required.

Now, suppose that this unfortunate truck operator has a passenger car and a son who rides a bicycle, and several friends who own cars and trucks, and have boys of their own who ride bicycles; and the fathers have friends who operate threshing machines and tractors and who own or manage tire stores, hardware stores, etc. The poison of his misfortune may be transmitted to his boy and to his friends who give the agent, either directly or indirectly, his sales of trucks, passenger cars, tractors, passenger car tires, truck tires, bicycle tires, belting and other commodities. And if the agent persists in his highly exaggerated and fantastic yarns about pneumatic truck tires he will soon be bankrupt. It is true that this is only one instance, but it must be conceded that there may be many instances of the same nature if truck agents and truck salesmen do not study what trucks are to do and where they are to go before recommending pneumatic equipment.

Sizing Up Customer's Needs

It is important, when considering tire equipment, to keep in mind that neither solids nor pneumatics are best. In some cases it is one. In some cases it is the other. There is a distinct need for both types and the whole difficulty is to decide which is better for the particular case in mind. The first thing to do in working out this question is to get a definite idea of the main differences between the two types.

Suppose a business man comes to ask your advice about his truck tire equipment because he is wondering whether he should have pneumatics. You investigate and find that his factory is in a district where traffic is fairly congested at the time when the truck would be in use. You find that much of his route will be through busy streets and his stops are fairly frequent. The streets are not hilly and are kept pretty free from snow in the winter.

What would you recommend? You would probably figure it out in this manner: Pneumatics would give greater cushioning, but this truck is going to run on smooth streets, where the vibration is not very bad even with solids. Pneumatics would give greater speed, but the congested traffic and frequent stops would not allow that extra speed to be developed. They would give greater traction, but the streets are level and are kept fairly clear of snow in the winter—the extra traction is not needed. The normal saving of gasoline effected by pneumatics would be largely offset by the short runs and the frequency of the stops. Altogether you cannot see a great deal in favor of pneumatics for this particular truck. Besides, their extra cost is considerable and is repeated every time the tires wear out. So, in this instance, you recommend solid tires.

In the great revival which is bound to come in the allied motor and tire industries you should build well and ensure permanent future business by blending level judgment with enthusiasm. A sale is not complete until the customer has accepted the goods, paid for them, and manifested his satisfaction with them by giving you a new order. If your ambition is to sell in this manner you must become a keen student and a specialist in your calling, and thereby cultivate judgment that is reliable. And be unbiased when you are asked for advice. What you want is sand—good, gritty sand.

Sask. Auto Repairs Act Repealed

ON December 14th, an Act repealing the Saskatchewan Automobile Repairs Act passed the Provincial Legislature three times, carrying away to the limbo of forgotten things a piece of legislation which promised great harm to the automobile trade.

It will be remembered that the Act provided for the stocking of a complete supply of replacement parts by every dealer handling automobiles in Saskatchewan even though only one car was sold during the season. Where the dealer handled two or more makes of cars, as is very often the case, he was required to carry a complete stock of repair parts for them all. This meant that a dealer selling a car say priced at $2,000, would have been compelled to carry between $3,000 and $3,500 worth of repair parts. As this was an impossible task for them to comply with, they would simply have ceased to exist as a merchandising trade.

Besides this the dealers were to file the retail list of repair parts with the Provincial Government, giving 30 days' notice of any fluctuation in prices. This was another impossibility, as prices change daily, a repair part costing say $1.50 to-day, might cost $1.65 to-morrow, and so on.

As the Act did not come into force until the 1st of May, 1920, the filing of lists did not affect the dealers this year, as the Act provided that they be filed by the 1st of February each year, and on the advice of the R.M.A., most dealers, for the time being, stamped their order forms to the effect that all warranties under the Auto Repairs Act were waived.

Repeal of the Act was brought about mainly through the activities of the Implement and Auto Section of the Saskatchewan Retail Merchants' Association. Another striking proof of the advantages of organization.

Pulling the mowers is only one of the many jobs the International will do. All through the year there is work for a tractor on every farm in Eastern Canada.

Go Out and Place this Tractor on the Farms of Your Territory

Each Sale Will Build Good Will for Future Years

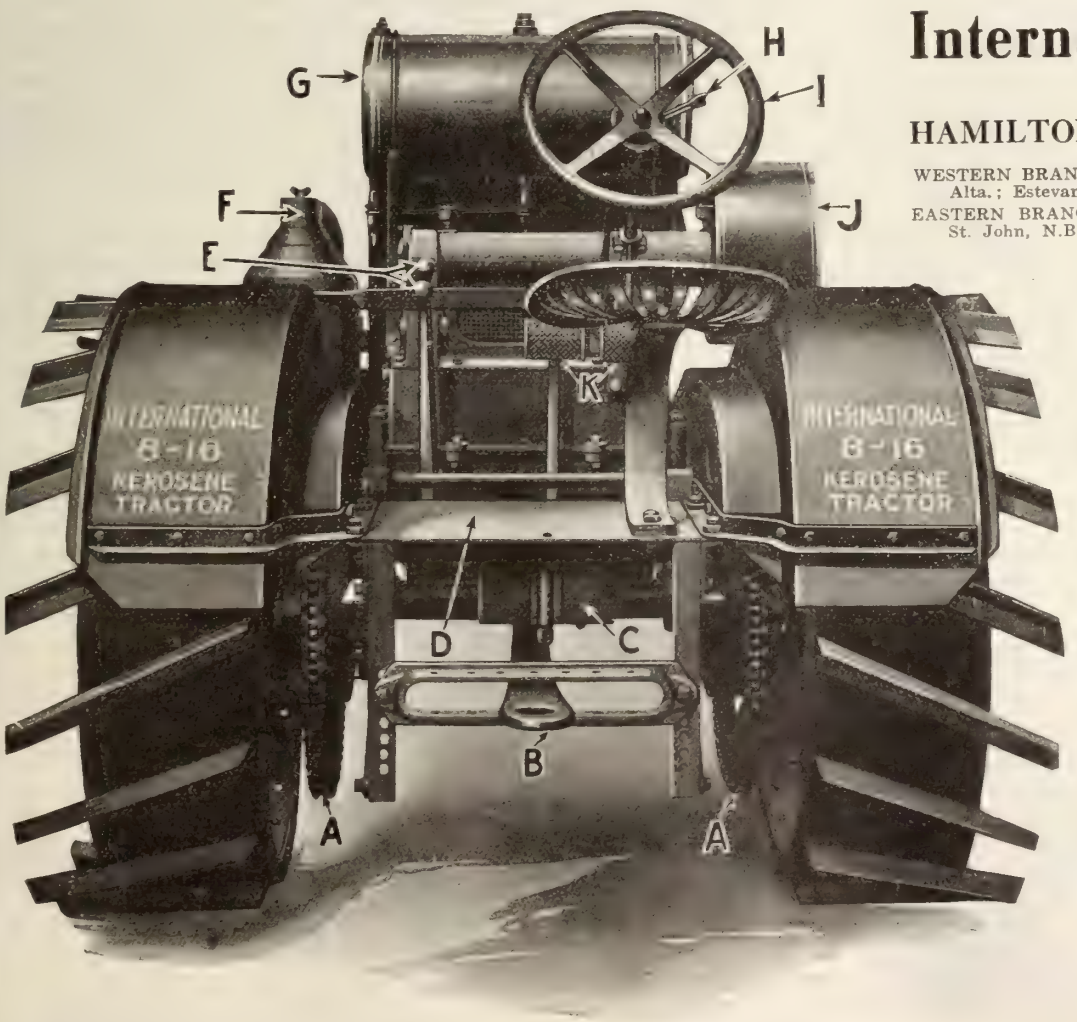
An International 8-16 will help make the best of good hay weather. Loaded high with the loader, then to the mow on high.

THE **International 8-16 Kerosene Tractor** is a tractor that makes a special appeal to prospects from every point of view. The first impression is the graceful, trim design, the general compactness and the good balance of the tractor, with just the right distribution of weight on the front trucks and drive wheels. The next thing that strikes the prospective owner is the absence of exposed working parts; every thing is enclosed as protection against the grinding action of dust and dirt.

And he will be impressed by the flexible range of the drawbar, making it possible to pull a harrow, plow, binder, or wagon with equal advantage and by the convenient pulley so placed that the tractor can be backed into the belt in a hurry, with no chance for the belt to drag on the ground or rub against any part of the tractor.

Coming down now to more technical but nevertheless very important details—there is the throttle governor that regulates the fuel to the load; removable cylinder sleeves in the engine so that if a cylinder should become scored through the use of poor lubricating oil, for instance, a new lining can be put in at once, renewing the cylinder; centralized auto-type control, making this tractor as easy to handle as an automobile.

There are other desirable characteristics of the **International 8-16 Kerosene Tractor,** as every agent and owner knows. Canada is full of "tractor business," waiting for the enterprising agent—and he who wants to sell International 8-16 tractors will find many sales awaiting him on his territory. This is the year to go out after business. Ask us for all available assistance.



Note the convenient arrangement of the levers, steering wheel, etc. Both rear wheels are drivers. A, strong, durable drive chains; B, quickly adjustable drawbar; C, tool box; D, platform; E, handy gear shift levers; F, water air cleaner that keeps dust and dirt out of the cylinders; G, fuel tank that is easy to fi'l; H, spark and fuel control levers; I, steering wheel; J, efficient belt pulley; K, brake and clutch pedals.

International Harvester Co.
of Canada, Limited

HAMILTON :-: CANADA

WESTERN BRANCHES—Brandon, Winnipeg, Man.; Calgary, Edmonton, Lethbridge, Alta.; Estevan, N. Battleford. Regina, Saskatoon, Yorkton, Sask.

EASTERN BRANCHES—Hamilton, London, Ottawa, Ont.: Montreal, Quebec, Que.; St. John, N.B.

This is the kind of work that proves the value of throttle governors. First, a big load, then no load at all. The governor on the International regulates the fuel to the load.

Forget Present Situation and Start Selling

By B. J. PAULSON

THIS is the year of the optimist. While his pessimistic competitor is going around with a long face and a dismal tale of woe about no business, reduced prices, extended credits, less crop acreage, decreased buying capacity on the part of the farmer—and a lot of other doleful stuff in the same category—Mr. Optimist is sharpening his pencil, cranking up the old flivver and hitting the road for new business.

Maybe you've heard the old proverb that goes something like this: "When the grass grows, the horse grows fat; when the grass stops growing and becomes thin, the horse starves." You know, some implement dealers are like that. During the past couple of years business has been coming to them almost of its own accord—in fact, the chief difficulty, in many cases, has been to secure deliveries covering implements ordered by farmer customers. Yes, the grass was growing fine—and lots of horses grew fat!

But now the grass has quit growing and has been cropped pretty short—and many of the horses that were fat are becoming thin! And other horses, instead of waiting for new grass to grow, are hunting pastures that are still green. Which kind of a horse are you?—one of those that grew fat during the days of opulence and are now starving, or one of those that secured a good living then—and plan to do the same thing now and henceforth indefinitely?

There's another wise old proverb that reads: "The cat would eat fish, but she would not wet her feet." That cat was almost human, wasn't she? She was willing to eat the fish so long as it came to her without wetting her feet, but when it came to jumping into the creek and catching her fish, pussy wasn't there at all! No, she simply wouldn't get her feet wet! She liked her fish served on a platter but she'd starve before she'd stalk her fish in the creek or river. At that the cat probably would have had her hands full—her paws, rather—if she started out to catch herself a mess of fish under ordinary conditions—unless she got friendly with a few cat-fish and decoyed 'em up on shore by meowing like a little kitten fish hunting its mother.

All Looking for Greener Pastures

Are you a cat?—but no, of course not. Beg pardon. We just agreed, a moment ago, on the horse theory. It would seem that we are getting our menagerie mixed—getting it crossed with an aquarium and all sorts of things. Rising above the cat-and-fish stage, and returning to the more elevated horse phase, the point is, it being agreed that all of us are horses looking for greener pastures in which to browse, where shall we find these pastures? Yes, indeed—"the pasture's the thing," as Shakespeare no doubt would have said if he had had the opportunity. Fortunately for him, he didn't.

Yes, the point is, where are we going to find these green pastures? It's my private idea that we'll have to hunt for 'em and that we're quite likely to find them almost everywhere. One sure thing is that we'll never find them by sitting still and waiting for the grass to grow under our feet. We've got to be up-and-doing and out-and-after-'em! Most implement dealers have enough range to cover to insure them a modestly comfortable living even under the present more or less strained financial and economic situation. The whole thing resolves itself down to this: Let's forget about the present situation and start selling.

Do I hear someone come back with: "Sure, let's start selling—but whom are we going to sell to and how are we going to do it? Talk is cheap—anyone can say 'let's start selling,' but when it comes right down to the actual business of selling, well, that's an entirely different matter."

Show Farmer How to Reduce Costs

Granted. It is a different matter. But it isn't a hopeless task by any means. And perhaps talking about it might bring out one or two ideas that can be applied practically, to good advantage. For instance, what's the matter with the notion of figuring out for the farmer every possible way you can think of in which he can reduce his farm operating expenses? That's the place to hit the farmer this year—help him produce at lower cost. It's a foregone conclusion that he won't be able to command higher prices for his crops this year than in 1920—at least not on an average—and there are not very many farmers who plan to increase their crop acreages. At the same time every farmer is very much interested in increasing his annual profits—in making more money. If he can't make it through higher prices for his products and if he isn't going to raise a bigger crop, there is only one other way in which he'll achieve his end, and that is, through producing at lower cost.

Every up-to-date farm machine and implement you handle is designed to reduce farm operating costs in some way. Did you ever stop to look at it that way? But it's a fact. Every farm machine you sell is bought by some farmer because he thinks it will make his work easier; or enable him to do more work in a given time; or because, with the aid of such a machine, he can reduce the cost in dollars and cents of performing some certain operation on the farm; or because the machine will enable him to produce more per acre; or, perhaps, it may be that the machine will make it possible for him to save a greater percentage of his crop than he could hope to otherwise. It doesn't make any difference which of these "ors" it is, each one represents some economy—economy in physical effort, time, money, increased yield, crop-saving, labor and so on. Any way you care to look at it, the machine is reducing operating costs per unit of production. If it helps the farmer raise more, it is reducing the cost per bushel, per pound or per ton of whatever the crop happens to be. If it helps save effort, time, money or labor, it is performing the same service.

You've sold a lot of implements in your time, no doubt. Stop, then, and think a bit—reason out why this farmer and that farmer and the other bought the machines from you that they did. Each one had some good reason for spending his money with you—and that reason is a good selling argument for you to use in selling the same kind of a machine to some other farmer. Perhaps you can elaborate on these reasons—develop them to a point where they become twice as strong as the original reason that inspired the purchaser. When it reaches this stage—well, it ought to carry considerable weight in selling the fellow who needs a machine. Why not resurrect some of the arguments you used to use back in the days when you had to go out and sell implements if you expected to stay in business?

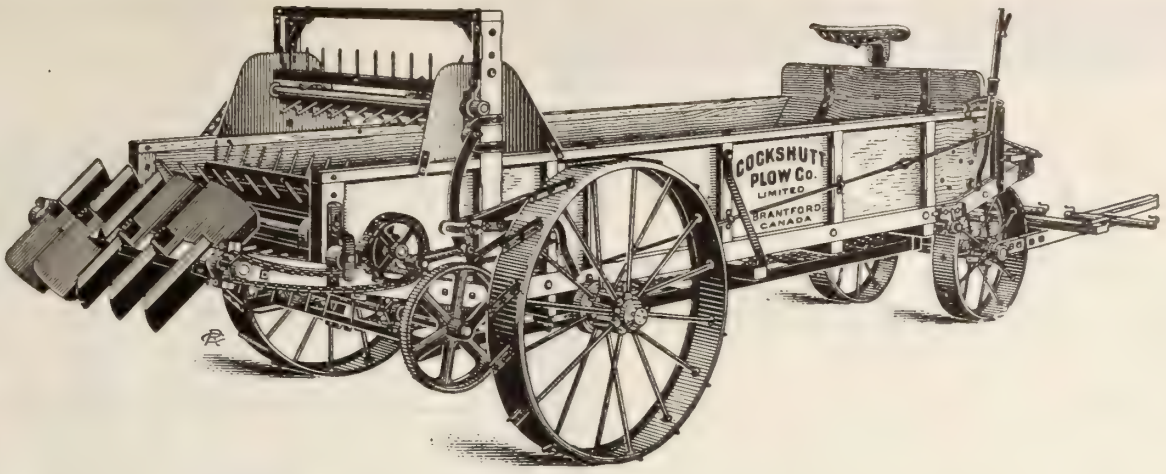
These quiet winter days are a good time to think these things out; to arrange a plan of action for spring and summer implement selling. Manufacturers' catalogues and farm paper advertisements usually contain good suggestions for selling farm machinery, if you'd only take the trouble to dig 'em out. If you don't believe it, just look through a few of the catalogues you have on hand, and study some of the advertisements in your trade paper and favorite farm journal. And when you've done this, if you can't find what you want, just sit down and write letters to a few of the manufacturers whose lines you handle and tell them you're in the market for a bunch of hot selling dope—some sure-fire stuff with real selling power behind it! Can't tell—maybe such a stunt might work out to better advantage than you'd expect. Manufacturers are usually rather keen about selling their implements to dealers—and the only way they can hope to continue to do so is to help the dealer sell to the farmer, so when they help the dealer they are really helping themselves as much as the dealer. Isn't that right?

Ever Think of Road-Building Machinery?

By the way, while we're on this subject of ways and means for scaring up new business, did you ever stop to consider the possibilities of a good line of road-building machinery in connection with your regular implement line? You know the condition of the average country road along about the middle of April after the breaking up of winter and a few rain-massage treatments. They're usually in pretty bad shape. Someone has to fix them. They must have the right equipment in order to do the job right. Someone has to sell the equipment. Why shouldn't you be that someone? County and road officials and municipalities are always good prospects for road machinery—and such accounts are usually first-class credit risks. Or where appropriations of public funds are insufficient to warrant the purchase of new road-building equipment, it is frequently possible for the road officials to hire such equipment. This presents an opportunity for the tractor farmer—offers him another source of revenue if he has the right road-building equipment to operate with his tractor. Perhaps the township, county or municipality is able to buy graders, scrapers, drags, rooters, scarifiers, etc., but cannot afford the purchase of a tractor. Some farmer is able to buy the tractor but can't see his way clear to investing in a bunch of expensive road machinery—so the dealer sells the road equipment to the road officials and the tractor to the farmer, and the farmer and road officials get together—and everybody is happy!

That's the ticket—let everybody be happy that the present situation isn't any worse than it is; that it's merely a natural stabilizing process and that it's all for the best. If we'll just forget about our own troubles and the other fellow's troubles for the time being, and don a smile and buckle on our selling armor, we're sure to experience a lot of pleasant, profitable action before the year is over.

As we said at the beginning, this is the year of the optimist—but he must be one who has for his motto: "Everything comes to him who goes after it—if he goes after it hard enough"—which is just another way of saying that the fellow who said: "Everything comes to him who waits" was all wrong, whoever he happens to be—or was.



There are Dozens of Good Prospects in Your Section for a Real Spreader

COCKSHUTT
MANURE SPREADER

The business-like farmer knows the value of fertilizing his acres and is fully alive to the value of that "gold mine" in his manure pile. Very often it just needs a suggestion from his Dealer to get him to consider buying a Manure Spreader. And if it's the Cockshutt that's mentioned, the chances for a sale go up 50%, because it is so well advertised and favorably known that it makes its own "prospects" in every section.

Our idea of a successful Manure Spreader is one that will thoroughly carpet the land with finely pulverized manure at a minimum expenditure of horse flesh. And we have it! Moreover—we know it must be simple and rugged enough to stand for years the hardest kind of service. And again, we have it!

It is built low—the top of the box is just waist high, 41″ from the ground, with 17″ clearance underneath.

The two revolving, spike-studded delivery cylinders break up the lumps and are very efficient. But we go further—special distributing paddles behind, pulverize the manure still more and spread it thoroughly over much more than the machine's width. Strong, direct chain drive—no bothersome gears or clutches. Feed is simple and positive, no matter how big the load. When not spreading, the machinery is not running—a handy lever controls this. Amount spread can be readily changed as desired.

Cockshutt principles of simplicity, light draft and rugged efficiency are well worked out in this real spreader.

Let us send you a supply of literature on these machines—also on other Frost & Wood Cockshutt Implements. Handling these lines puts you in a position to supply ALL the needs of the farmer—and with goods that he knows have a splendid reputation for quality and service.

Cockshutt Plow Co.
LIMITED
Brantford, Ontario

Sold in Eastern Ontario, Quebec and Maritime Provinces by

The Frost & Wood Co.
LIMITED
Montreal SMITHS FALLS St. John

WINNIPEG, REGINA, SASKATOON, CALGARY, EDMONTON

SHOP NOTES FOR THE GARAGE MAN

WEIDENHOFF TESTING STAND

THIS stand is for testing starters, generators, magnetos, induction coils, distributors, distributor caps, condensers, and spark plugs. It will be found of considerable interest to garage and repair men.

Many original and exclusive features are claimed for this stand which make results so sure, the makers say, that the average automobile mechanic can do the work that heretofore required the services of an expert. A few of the more important features are listed below:

The motor, ½ h.p., is guaranteed for 50 per cent. overload. Variable speed, 0-3,800 r.p.m., reversible through switch on panel. Operates on either 110 or 220-volt, 25 to 60-cycle circuits; 49 set speeds provided through variable speed controller on which are mounted the push buttons for start and stop. Sliding rails on base provide quick alignment. It can be stopped while running at any speed by pressing stop button, and started again at the same speed by pressing start button. This is an important feature. Shows instantly the result of adjustments on the instrument being tested. This direct driving arrangement is a noteworthy improvement over the friction drives. Friction drives require a motor of 2 to 4 times greater horse-power. The direct chain drive also saves the time required for aligning the work with the friction shaft.

The test vise is of special design. It holds any size or shape of starter or generator. A 6-inch adjustment is provided through ball crank handle on front. The driving chuck is also of special design, with 1 1-32 inch hole through body. It automatically centers itself close to the housing on any size of shaft from ½-inch to 1-inch, silent driving chain included.

The speed indicator registers 0-4,000 r.p.m. It also indicates the motoring rate of speed in miles per hour that the generator is being driven. An automatic cut-out, 6 or 12-volt circuit is provided by operating over-throw switch. The cut-out is automatically connected with either circuit. This is a feature of importance.

The torque or load capacity of the starters is measured by the dial scale on the lower panel board. A special brake attachment, to be connected to the end of the starter shaft, is also provided. The ammeter is calibrated 0 to 25, and 0-500. The range is controlled by a double pole, double throw switch; it is 7-inch diameter with jewel bearings and correct zero adjustment. The voltmeter is calibrated 0-25; 7 inches diameter, jewel bearings and correct zero adjustment, connected so that it will indicate the voltage drop of battery with starter load.

A special ammeter calibrated 0-5 amperes, reading in 1-10 amperes for testing high resistance windings, such as magneto armatures, starter and generator field coils, induction coils, etc. The spark cap is 12 points adjustable from 0 to ⅜-inch for testing magnetos and distributors and is driven on the test bench. The adjustment of all points is controlled by one operation, which insures the same length of gap at each point.

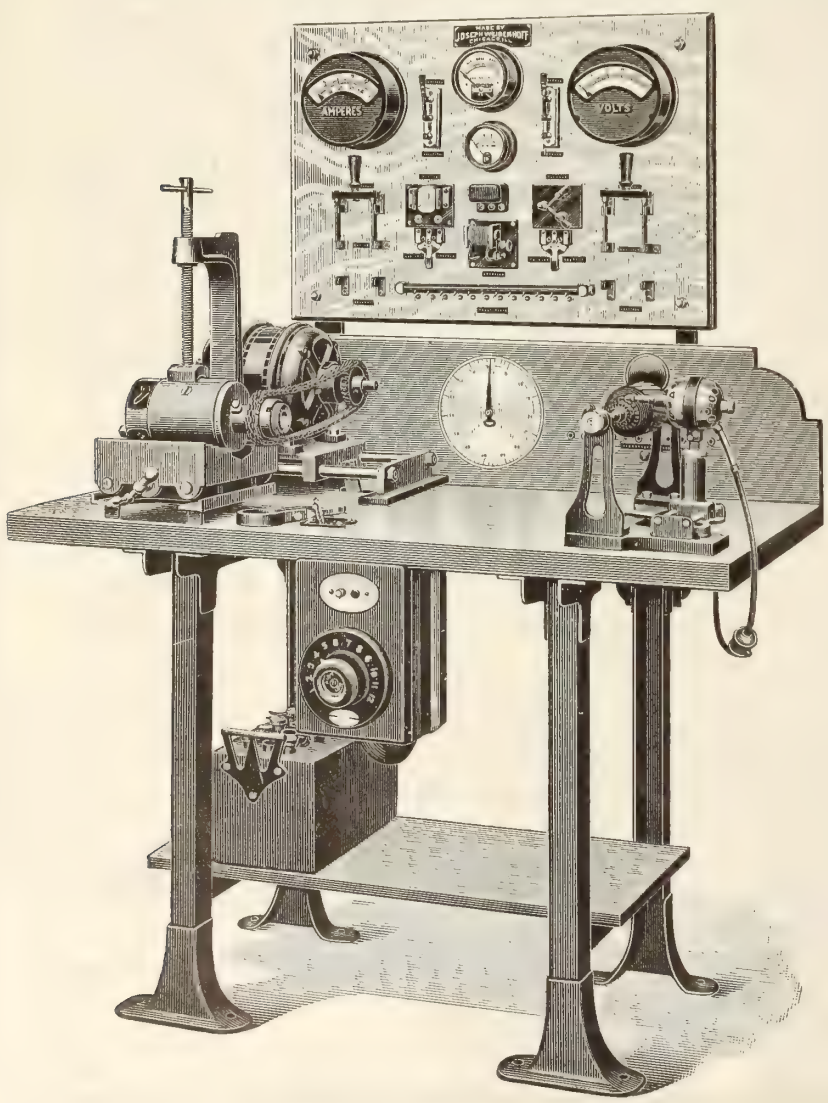
An adjustable test gap, which also acts as a safety gap when testing distributor heads and condensers, is used, also a standard test condenser for testing magneto and ignition coil windings.

Socket connections for test leads are provided on right side of the lower panel. A special vibrator for testing ignition coils and magnetos without removing the windings or condensers is a feature.

For driving magnetos and ignition distributors direct from the motor shaft a special holder has been provided at the right side of the test vise which holds all standard magnetos and magneto replacement brackets. This holder is not shown in illustration.

The commutator undercutter is direct motor driven and is instantly adjustable for armatures from 3 to 12-inch, and for straight or angle slots.

The top shelf and lower panel board of the stand are made of well-seasoned material, carefully fitted, glued and finished in dark walnut. A shelf for the battery is also provided as shown, but the battery is not included. The upper instrument panel is of white Alabama marble, ⅞-inch thick, with ¼-inch beveled edges. The weight of the stand is 550 pounds. It is manufactured by Joseph Weidenhoff, 4352-4358 W. Roosevelt Rd., Chicago, Ill.



Weidenhoff Testing Stand

DUST THE PAINT SHOP'S GREATEST ENEMY

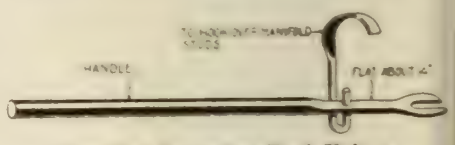
FIGHTING dust in an automobile paint shop is similar to fighting dust elsewhere. There must be method in it and you must not forget to keep everlastingly fighting. So far as possible the shop should be made dust and dirt tight, and the varnish room should be precisely what the vehicle finisher has always maintained it should be, namely, a mighty clean, carefully-carpentered and expertly-groomed apartment, in which nothing but varnishing is performed.

The paint shop should be kept free from all sorts and conditions of things which collect dirt and dust and add to the general confusion of the place. No surplus furnishings devices and apparatus should be maintained. Metal containers should be supplied, into which all waste and scrap and refuse made during the working day should be thrown, and from which, outside the shop, the contents may be emptied.

For actual cleaning of the shop, when the work is made a main business, for a few minutes daily, the vacuum cleaner is the paramount dust and dirt eliminator. With this device it is possible to actually keep the paint shop as clean as Aunt Jerush's kitchen, which was spotless. Eternal vigilance and the vacuum cleaner will solve the problem of the clean paint shop.

TOOL FOR REMOVING FORD VALVES

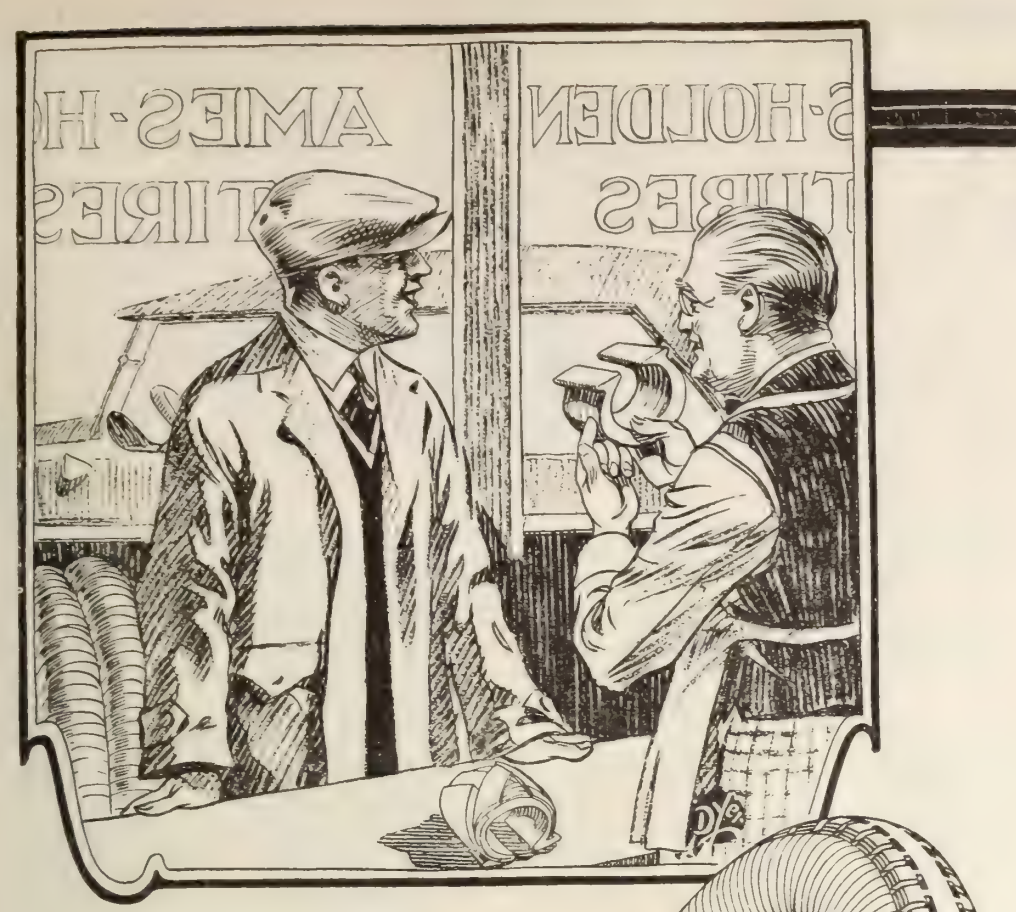
A TOOL for the removal of Ford valves may be made by any repair man from a piece of steel, ⅝ inch round and about twelve inches long. One end is flattened out for about four inches and then a ¼ in. hole drilled. The flattened end is then notched, as shown in illustration, to permit the insertion beneath the valve locking washer. A piece of ¼ in. rod is then bent at both ends, one end passing through the ¼ in. hole in the flattened part of the lever and the other end being used to hook over one of the manifold studs. It is not necessary to remove the manifold when using this home-made valve lifter.



Tool for Removing Ford Valves

LOCATING UNUSUAL NOISES IN ENGINE

AS an aid to locating the cause of unusual noises in automobile engines, it is recommended that the engine be throttled down and the frequency of the occurrence of the noise determined. Generally speaking common engine noises occur at either camshaft or crankshaft speed. By noting when the knock occurs with reference to the rotation of one or the other of these shafts, it may be more easily classified. In every case main bearings produce knocks at crankshaft speed, as do also crankpin and wristpin defects. Knocks at camshaft speed, are usually due to a loose bearing or to end play of the shaft. If an attempt is made to classify these sounds before proceeding further in the diagnosis, much time and effort can be saved.



AMES HOLDEN

Grey and Red Tubes

add to the mileage given by "Auto Shoes"

AUTO SHOES

mean mileage that costs less

AHM System

Selling "AUTO SHOES"

Business relations should be pleasant—can be pleasant—and incidentally profitable.

Selling Ames Holden "Auto Shoes" is going to be a pleasant business experience for dealers everywhere.

For there is a great purpose behind the marketing of Ames Holden "Auto Shoes" which carries within it the germs of a new relationship between manufacturer and dealer.

A relationship that calls for mutual confidence, unhampered by systems and reels of red tape, based on the fullest intent to deal frankly and fairly with the dealer and consumer alike.

Ames Holden "Auto Shoes" in the service they give—unusual mileage and reliability—are proving worthy of the policy behind them and the guarantee that upholds them.

And sales—steadily mounting upwards—are the infallible barometers which indicate the persistency of public demand for "mileage that costs less."

Let us tell you about the pleasant relationship that can exist between you and ourselves — the prospects and the profits in handling Ames Holden "Auto Shoes." Write.

AMES HOLDEN "AUTO SHOES"

CORD AND FABRIC TIRES IN ALL STANDARD SIZES

Manufactured By

AMES HOLDEN McCREADY LIMITED

HALIFAX, ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, LONDON, WINNIPEG, REGINA, SASKATOON, EDMONTON, CALGARY, VANCOUVER

Our Guarantee Has No Time Or Mileage Limits

Beatty Bros. Limited Bulletin

Little Visits With BT Dealers

Has Sold Over 250 "Time Savers"

In the two years that Mr. G. A. McMurtry, of St. Thomas, Ont., has been handling the Time Saver Washer he has sold well over 250 machines!

And this, too, in a city of only 14,000 population and against strong opposition.

What he has done with the Time Saver Electric Washer you can do with the Time Saver for gasoline engine drive. Thousands of farmers' wives are longing for relief from wash day drudgery. A Time Saver is coupled up to the engine in a jiffy and puts through the heavy farm washing in splendid shape.

Interior of Mr. G. A. McMurtry's store at St. Thomas. Steady advertising, good salesmanship and service have built up his splendid and profitable washer business.

You Can Sell the Time Saver

Profitable business can easily be yours in this line. When you sell Mr. Farmer farm machinery or stable equipment—sell Mrs. Farmer a washer! There's a good margin of profit and it's a sale that gives **satisfaction** all round.

Write our nearest Branch for circulars illustrating the Time Saver, and also the BT Line Shaft. By means of the Line Shaft the washer, churn and other machines can be run from one engine. It's a big seller—reasonable in price, adaptable and satisfactory.

We supply cuts and slides to help in selling. Drop us a card for full particulars.

Beatty Bros., Limited

Fergus, Ont. Winnipeg | London, Ont Edmonton | St. John, N.B. Vancouver | Montreal London, Eng.

MOTOR TRUCKS IN ORCHARDS

Arthur L. Dahl, in Scientific American

NATURE is slow in growing to maturity fresh fruits, but once they have reached that state of perfection they deteriorate more or less rapidly, and the greatest task of the orchardist is in marketing his fruit crop in the quickest possible time and with the least amount of spoilage.

The time of harvest for most fresh fruits is limited to a month or so, and the most bountiful crop will not put dollars in the bank unless the fruit is delivered to a buyer in good condition; and in aiding the fruit grower to harvest all of his crop and make delivery to the purchaser in the best possible condition, the motor truck is playing an important part in all sections of the country.

In modern times a large proportion of the fruit grown in many sections of our country is sold to canneries, and these canneries have very strict and rigid standards for fruit, and the prices paid for deliveries made by orchardists are based upon those standards. In too many cases fruit growers living some miles from the cannery have left home with a load of fresh fruit in good condition, but on account of the heat of the sun and the length of time required to reach the delivery point with a team, the freshness of the fruit was largely lost and the owner was severely penalized for this condition. Now this orchardist may have devoted as careful and intelligent attention to the production of that fruit crop as any of his neighbors, but because his transportation facilities were slow and inadequate he suffered the loss of a large share of the profit he should have had.

The first point of superiority of trucks for orchard use is speed in making deliveries. A truck, even though loaded to capacity, can make better time than horse-drawn vehicles, and in the movement of a large tonnage of perishable fruit, this might mean the handling of double the amount of fruit in the same time, compared to horses. The saving in time in making deliveries is in proportion to the distance hauled, for the longer the haul the more time saved, for the truck can maintain a steady speed over the entire distance and keep it up for many round trips, while horses naturally tire.

As an example of the time saved in using trucks for delivering fruit the following experience was related by one of the owners of the Harrison Nurseries, of Berlin, Md.:

"We use our trucks in transporting fruit, particularly peaches, from orchards to our packing plant. Peaches must be handled quickly, and it is also important that we make our schedule with the railroads. At packing time we employ from 100 to 125 people, whose work is directly dependent upon our trucks. Recently one of our motor trucks enabled us to transport a force of men from Berlin to Easton, 75 miles away, pick $16,000 worth of peaches and return in six days. Another of our trucks this season made thirteen trips in one day between one of our orchards and our packing plant, a distance of two miles, carrying 175 baskets of peaches on each trip, besides two other trips carrying employees."

Another peach grower reported that in the old days when he used a team he had to start for market, 10 miles away, between 12 and 2 a.m. and got back toward noon. The trip with the wagon had to be very slow to prevent bruising. Now, however, with an auto truck equipped with good springs, shock absorbers and pneumatic tires, the most delicate peaches are carried into market within an hour, and other stuff in half the time. He starts out at 5 a.m., is unloaded at the market by 6, and is back at the farm a little after 7, with the whole day ahead of him for other work.

Motor trucks not only enable the fruit grower to haul his crop in less time, but he can haul a great deal more to a load than with any other mode of conveyance. This means that in many cases the truck will handle in one load what would have been two or more loads with a team, and in this day of labor shortage this is an important advantage.

Throughout the various fruit districts of California motor trucks can be seen engaged in doing all kinds of work from hauling manure to fertilize the soil to hauling the fruit crop to market. Many owners have several types of bodies for their trucks, so that they can be used for different classes of work. In hauling fruit trays, or baskets, for instance, it is found desirable to have a wide platform on the chassis, while for other uses a closed or box body is required. In many cases the use of motor trucks has enabled fruit growers to save their crops when weather conditions were unfavorable.

TRACTOR PRODUCTION IN THE UNITED STATES

IN AN investigation made by the Bureau of Public Roads, United States Department of Agriculture, of the production of tractors in the United States during 1919, reports from 80 manufacturers show that they manufactured a total of 164,590 tractors during the year. The number actually manufactured during the year was only a little over one-half of the total production estimated in reports made to the office of Farm Equipment Control, United States Department of Agriculture, in January and February, 1919. Labor troubles and shortage of material, together with the facts that some of the companies discontinued the building of tractors, account in part at least for the decrease in production below the estimated output.

The reports also gave the number sold in the United States and for export, and the number on hand, in transit, in branch houses, and in the hands of dealers unsold on December 31, 1919. Five of these manufacturers built only tractors of six-belt horsepower and less. In all, reports were received from 156 companies, but only 80 had manufactured machines during the year. It is believed that the total number of machines manufactured by these 80 firms represents at least 95 per cent. of the total tractor production in the country during the year. The number of tractors of different sizes built by these companies during the year 1919 is as follows:

Makers' rating belt horse-power	Number of Tractors built
6 and less	3,760
9, 10 and 12	1,991
16 and 18	22,012
20 and 22	94,653
24, 25 and 26	15,546
27, 28, 30 and 32	17,597
35 and 36	2,453
40, 45 and 50	1,954
60 and over	1,624
Not given	3,000
	164,590

First Autoist—I thought you said if I were sociable with the judge I could get off?

Second Autoist—Were you?

First Autoist—Yes. I said "Good morning, Judge, how are you to-day?" and he replied, "Fine—twenty-five dollars."

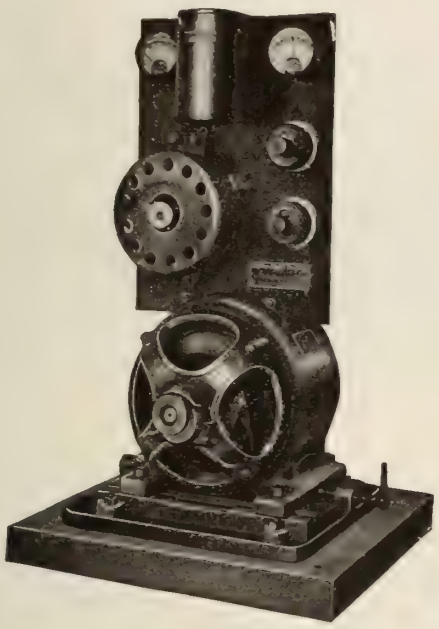
Mr. Isaacstein approached a taxi driver and asked what would be the fare for himself, his wife and children to a certain address.

The cabby asked $2.50. Mr. Isaacstein offered to toss the cabby double or quits.

The cabby consented and won the toss, whereupon the would-be passenger turned to his wife and said, in despairing tones:

"Just my luck, Rachel! Now ve shall have to valk home!"—Houston Post.

Northern Electric
POWER AND LIGHT

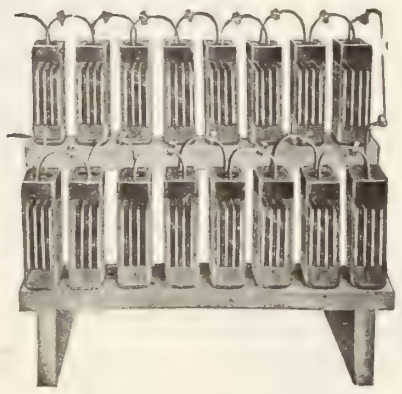


Belt connected plant—operates from any good engine

A Complete Line of Electric Farm Plants and Accessories

Belt Connected Plants
Direct Connected Plants
Water Systems
Portable Motors
Appliances
Wires and Supplies

This line will make you the Electrical Headquarters of your district.

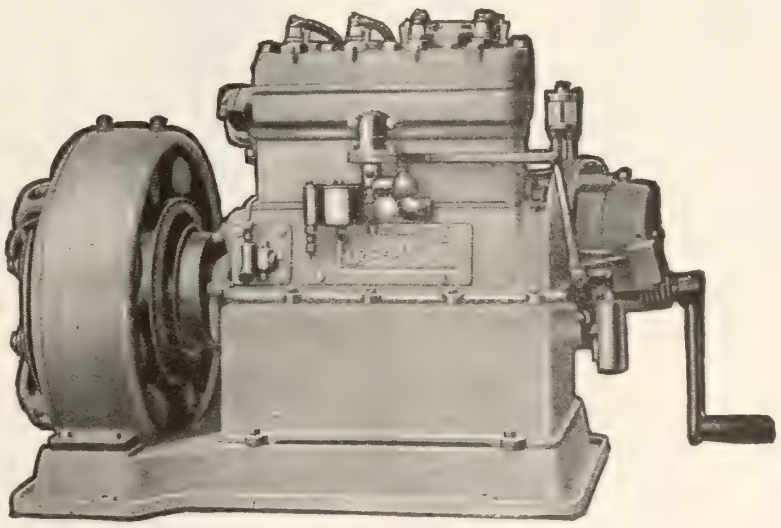


Titan Storage Battery, 16 cells supplied with each plant. 120 or 216 Ampere Hours

With the Plant you can usually sell a Water System, while limitless follow-up sales possibilities are yours with Utility Motors, Vacuum Cleaners, Washing Machines, Dishwashers, Irons, Toasters, Percolators, Wiring Devices of all kinds, Fixtures, etc.

Write Our Nearest House Now

Be the Farm Electrifier of Your District



110 Volt D. C. Universal Plant

For installations of 4KW, 8KW or 12KW

Northern Electric Company
LIMITED

Montreal Quebec Toronto Windsor Regina Edmonton
Halifax Ottawa Hamilton London Winnipeg Calgary Vancouver

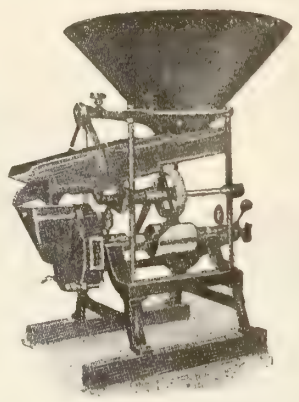
Threshers, Wood Splitters, Saw Benches, Drag Saws

We specialize in the manufacture of those products, and can take orders at lowest prices: our situation as to workmanship and material being the very best.

Why not write to-day for catalogue and quotations?

The Warwick Machine Company
Limited
Warwick, Quebec

He isn't a miller



The average dairy or stock farmer knows the beneficial effects of ground grain on his stock even if he doesn't know very much about milling or grinding. He knows what he wants and he expects his feed grinder to "know" how to produce it.

The best way to satisfy him, and the most profitable way, too, is to sell him a "Vessot" Feed Grinder. There are nine different sizes—you can suit anyone — and the "Vessot" is the simplest to adjust and operate. No technical knowledge is necessary.

"Vessot" Grinding Plates wear longer and cut better. Known by the "S.V." trade mark.

TRADE MARK S.V. REG

Write nearest branch of International Harvester Company for agency proposition.

INVENTORS AND MANUFACTURERS

S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by
International Harvester Co. of Canada, Limited.
Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon. Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John.

SELLING TRUCK TRANSPORTATION TO FARMERS

THE Sherman Auto Co., Greeley, Col., distributer of Bessemer trucks, brought about a fleet installation a few months ago that is full of significance. It sold to the Consolidated School District of Ault, Colorado, eight Bessemer trucks, 1½ ton chassis on which bus bodies were built; and, more important even than the sale, it assisted in the building, equipping and manning of a garage on the school grounds.

This consolidated district was established a year ago, serving with the new school building in Ault, a community of 12½ miles radius from the little city of 2,000 people. During the first year no provision was made for transporting the children. The necessity for transportation was evident, and the purchase of the buses resulted. The most convenient method of garaging seemed to be in the board's own shop, and a building was erected for this purpose, equipped with steam heat, on the school property. The Sherman company co-operated in the plans for the garage; helped in the selection of the man to operate the garage, and trained him in Bessemer truck work. The eight vehicles are operated by eight of the men teachers in the school. They live in Ault. They take the buses out each morning after the children, returning the children home in the afternoon, and bringing the buses back to the garage by 5 o'clock. The vehicles are inspected, oiled and greased each evening. The Sherman company trained the teachers in the driving of the trucks.

The sale of eight trucks to a school district is significant enough in itself of the future field for truck sales in Colorado. Still greater importance, however, attaches to the effect which the efficient, regular operation of these trucks will have toward stimulating use of trucks by farmers.

The influence of the almost daily passing of the buses on the roads, stopping at farm houses for children, is certain to stimulate interest in and appreciation of truck service. Every farmer who has a child in school will note the continuous demonstration of truck use. And the demonstration varies from the usual advantage to the dealer in the use of his truck in the community, in this respect—that the dealer has his hand constantly on the one factor in the servicing of eight trucks. The eight trucks must all go every school day; they must all be inspected every evening, at the same place by the same man.

Of all "key positions" which a truck dealer might covet, consolidated school districts would seem to be among the very important fields.—From Motor World.

THE TIRE INDUSTRY

By Gordon Spencer

THE position in the tire industry may be briefly summed up as follows: The high peak was reached in March, 1920, but from that time through the summer trade became dull.

This was due to two or three causes. In the first place the tightening of credits put a crimp into the selling of automobiles and consequently affected the tire industry. In the second place, as it seemed by common consent, people held off from purchasing in the hope of a reduction in prices, and in the third place a spirit of conservation was abroad and people have been looking after their tires and economizing by not carrying spare tires as has rarely, if ever, been the case in the history of the industry.

The consequences of all this were obvious and tire sales went down and down.

This is not true now, however, of the industry's condition, for from the middle of November the tide has undoubtedly turned and the increase in sales for the month of December is over that of November and there is every reason to feel with the help that the removal of the luxury tax has given that a remarkable recovery in the tire trade will have taken place by spring.

In fact it is possible to be even more optimistic than that. It is possible owing to cotton field conditions that there may be a considerable restriction in the output of cotton. It is reasonable also to feel that a large number of persons will hold off buying tires until the spring. The consequences of these two things will be that dealers and manufacturers who have been buying from hand to mouth will likely find themselves in the spring unable to meet the demand.

It is well to remember that the number of automobiles in Canada increases at the rate of about 25 per cent. per annum, to say nothing of the steady increase in the development and sale of the motor truck and the possibilities that are opening up in the Dominion for the motor bus.

In face of all this the rubber industry can look to 1921 with the greatest optimism.

The conditions of labor in the tire industry have been generally very good. There has been a large amount of welfare work done and factory conditions have been healthy and pleasant. It is true to say that the average wage in the the tire business is at least as high, often times much higher than the average wage in any other industry. The average wage at the Goodyear factory for a considerable period was over $31.00 per week.

Every one knows that prices have been reduced very slightly during the past few weeks. There never was any need to reduce prices for tires because, as has been pointed out frequently, the percentage of increase in the prices of tires during the last six years has been very nearly negligible so that it is unreasonable to expect a very great change in the matter of prices. There may be an upward tendency. The possibilities in the export field are very large, especially so in the east, although owing to conditions in Europe trade may be held up for a time for this field.

To sum up, while we do not suggest any extravagance of view for the industry, we feel that a sane position is the position that says "all is well."—From Industrial Canada.

AMES, HOLDEN, McCREADY CHANGES

R. W. ASHCROFT, director of publicity for Ames, Holden, McCready, Limited, has been appointed assistant to the president, in accordance with a new policy which makes for the closest co-operation between production, sales and advertising.

Mr. Ashcroft brings a unique experience to bear up the conduct of his new duties, he having been for years director of publicity for the United States Rubber Company and the Canadian Consolidated Rubber Company, and the originator of many successful sales promotion schemes.

W. Youngblud, lately tire sales manager of the Quebec division for the Dominion Rubber System, is the latest acquisition to the Ames, Holden, McCready organization. In assuming the sales managership of the tire department Mr. Youngblud will have ample scope to exercise his unusual ability and wide experience.

ANGLO AMERICAN MOTORS

A LARGE piece of land has been purchased by the Anglo American Motors, at Mimico, Ontario, for the erection of a factory for the purpose of manufacturing the La Marne automobile. The purchase price is in the neighborhood of $100,000.

The factory will be erected in ten units and when completed 2,000 men will be employed. Building operations are to start as soon as the weather is favorable.

Make Sure of Big Spring Business

Get In The Cletrac Line-Up

Cletrac sales will increase enormously in 1921. Production has caught up and there will be plenty of Cletracs for spring business. Make sure of your supply—get in your orders at once.

Our biggest advertising campaign is behind you. Every Canadian farmer will have the Cletrac message hammered home to him time after time right through the year.

Cletrac is a ready seller. No tractor can compare with it for reducing production costs and increasing profits on the farm. It's easily manoeuvred and always dependable.

Big profits will be yours this year if you get in the Cletrac line-up. Write for our generous dealer terms and go right after prospects now.

The Cleveland Tractor Company
of Canada, Limited

Home Office: 21 Ottawa Street, Montreal

Western Sales Office: 261 Fort Street, Winnipeg

HARD THIS WAY BUT—

EASY ON A TRACK THE CLETRAC WAY

SPECIFICATIONS:

Horsepower: 12 at drawbar, 20 at belt-pulley.
Length: 96 inches.
Width: 50 inches
Height: 52 inches.
Weight: 3,455 pounds.
Turning circle: 12 feet.
Traction surface: About 800 square inches.
Centre to centre of tracks: 38 inches.
Belt-pulley: Diameter 8 inches, face 6 inches.

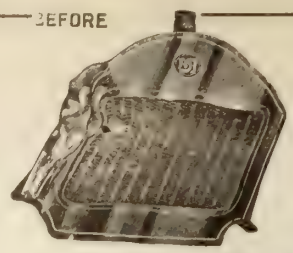
There's A Big Bunch Near You

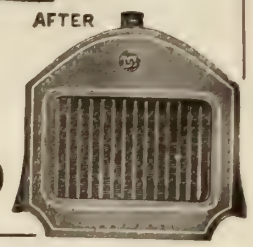
A conservative estimate places the number of immediate tractor prospects in Canada at 350,000. There's a large number right in your own district. Every Mother's son of them would rather buy Cletrac than any other tractor. They're just waiting to be sold. It's up to you.

Cletrac
TANK-TYPE TRACTOR

Don't tackle it!

If you are not fully equipped to make complete and satisfactory repairs to damaged Fenders, Radiators, Lamps, etc., do not take a chance with your reputation. Send such work to the oldest auto repair shop in Canada, where a staff composed entirely of experts will give you quick, high-class service.





WHITE & THOMAS, 210 Simcoe St., TORONTO

Of Interest to Every Canadian

Number One of a Series of Advertisements

Efficient service is the keynote of membership of

THE CANADIAN MOTOR, TRACTOR AND IMPLEMENT TRADE JOURNAL

—IN—

Canadian National Newspapers and Periodicals Association

—a highly constructive service—absolutely dependable and devoid of prejudice and personal bias. It means much to you!

The policies and principles back of this important service enable you to secure practical and impartial information of great value in business and in the home: and they assure a ready fund of literature of exceptionally high standard at all times.

To read the Association's Standards of Practice listed herewith is to understand what this Association means to you.

Standards of Practice

Canadian National Newspapers and Periodicals Association

THE Members of this Assoeiation shall dedicate their best efforts to the cause of business, and public service, and to this end shall pledge themselves:

1. To consider first the interests of the Subscriber.
2. To work for truth and honesty in all departments.
3. To eliminate, in so far as possible, their personal opinions from their news columns, but be leaders in thought in their editorial columns, and make their criticisms constructive.
4. To refuse to publish puffs, free reading notices, or paid write-ups, to keep their reading columns independent of advertising considerations, and to measure all news by the standard "Is it real news?"
5. To decline any advertisement which has a tendency to mislead, or which does not conform to business integrity.
6. To solicit subscriptions and advertising solely upon the merits of the publication.
7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements, subject to proper authentic verification.
8. To co-operate with all organizations and individuals engaged in creative advertising work.
9. To avoid unfair competition.
10. To determine what is the highest and largest function in the field which they serve, and then to strive, in every legitimate way, to promote that function.

This is Number One of a series of advertisements regarding an Association that typifies thorough-going Canadian stability. Read the forthcoming advertisements in the Magazines, and Agricultural, Business, Religious and Educational newspapers, and Technical newspapers.

Canadian National Newspapers and Periodicals Association

Office - 70 Lombard Street - Toronto, Ontario

MAYBE ADAM LAUGHED AT THESE

"Wuz it a good show, Buddie?"
"Naw, only four killed!"—New York World.

Wifey—"Marriage soon ceases to be a matter of billing and cooing."
Hubby—"Oh, the billing part sticks all right."—The Bulletin (Sydney).

"Have you a little fairy in your home?"
"No, but I have a little miss in my engine."—Philadelphia Retail Public Ledger.

"Agnes always finds something to harp on."
"Yes; I only hope she'll be as fortunate in the next world."—Boston Transcript.

An income-tax form was returned recently with the following remark:
"Sir, I belongs to the Foresters and don't wish to join the Income Tax."—Tit-Bits (London).

"Isn't Nexdore's wife rather fond of an argument?"
"Is she? Why, that woman is so fond of an argument she won't even eat anything that agrees with her."—Boston Transcript.

Mr. Close—"I'm sure your butcher gives you short weight for your money."
Mrs. Close—"But consider, my dear, the long wait you give him for his."—Royal Magazine.

"Now, then, my hearties," said the gallant captain, "you have a tough battle before you. Fight like heroes till your powder is gone; then run. I'm a little lame, and I'll start now."—Auto Links.

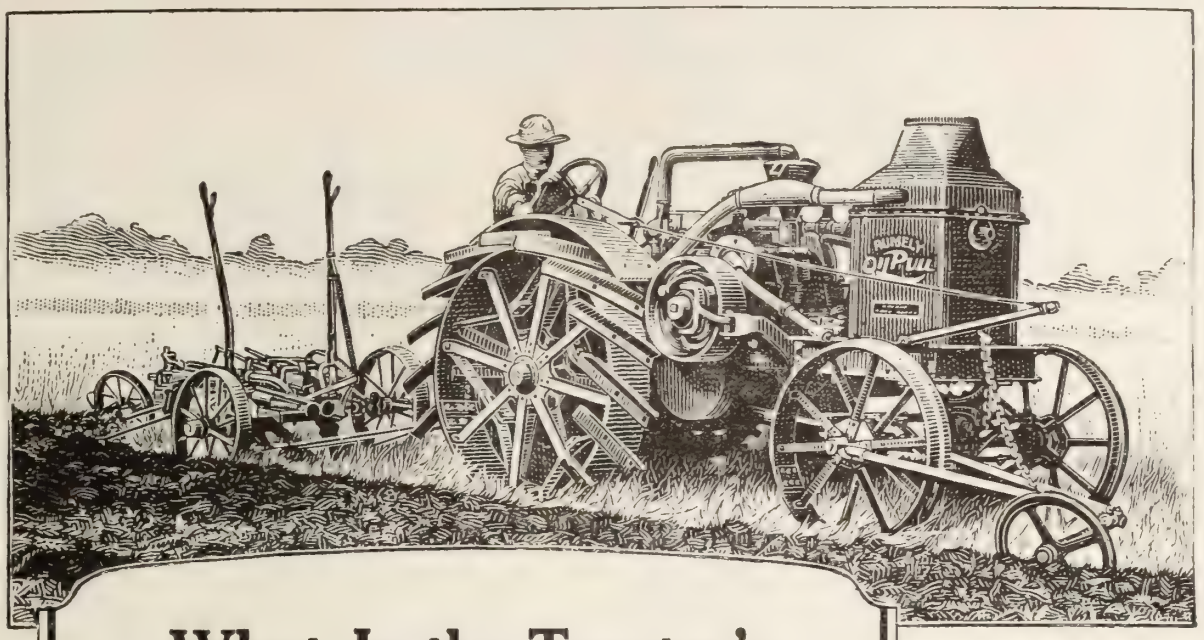
Reginald once in a mood of choler
Thrust his head under a traction-roller.
The neighbors were strangely surprised to find
How the mishap had broadened Reggie's mind.
—The American Legion Weekly.

"Any trouble getting a drink in your town?" asked the farmer.
"Not a bit," replied the city man. "Why, the bootleggers are so thick that they have to wear badges to keep from selling booze to one another."—Auto Links.

"You must have been walking carelessly," said the lady whose car had run down a man. "I'm very careful, I've been driving seven years."
"Lady, that's nothing; I've been walking for fifty-four years."—Erie Dispatch.

I looked at my brother with the Microscope of Criticism and I said, "How coarse my brother is!" I looked at him with the Telescope of Scorn and I said, "How small my brother is!" Then I looked in the Mirror of Truth and I said, "How like me my brother is!"—Bolton Hall.

She lifted her pale face appealingly to the coarse, heavy-limbed man standing menacingly before her with a long, gleaming knife in hand.
"Have you no heart?" she asked weakly.
"No!" he answered, gruffly.
"Then let me have a little liver."



What Is the Tractor's Record of Economy?

Before you make your tractor contract, get its *record* of economy.

Don't be satisfied with merely statements of what the tractor will or *may* do under *certain* conditions, but get a record of what it has done under *all* conditions over as long a period of time as possible.

The story of any one of thousands of old OilPull tractors, scattered throughout the world, would prove the unequaled economy of the OilPull. Take the one owned by Radtke Bros., Spiritwood, North Dakota, which was bought nine years ago. Its owners have always given it hard service the year 'round—plowing and breaking sod, threshing, operating feed mill, etc.

For seven years it performed faultlessly without the need of a single important repair! It is now nine years old and not half "worked out." Many twelve-year-old OilPulls, including the first one built, are still on the job!

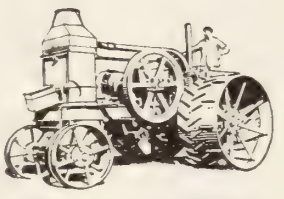
The OilPull's remarkable economy in fuel is well and widely established. For the last nine years the OilPull has held the world's tractor fuel economy record! And—consider this point—the OilPull is the *only* tractor backed by a written guarantee to burn successfully all grades of kerosene, under all conditions up to its full rated brake horsepower! The OilPull is the tractor of *proved* economy. When you sell an OilPull you *know* you are selling the tractor that is cheapest in cost per year of service.

Have us tell you about other OilPull features that are as outstanding as its economy—about its dependability, long life, etc.

And have us tell you about the great service organization back of every Advance-Rumely dealer.

ADVANCE-RUMELY THRESHER COMPANY, *Inc.*
LaPorte, Indiana

Calgary, Alta. Regina, Sask.
Saskatoon, Sask. Winnipeg, Man.
48 Abell Street, Toronto, Ont.



Nine-Year-Old OilPull
Owned by Radtke Bros.
Spiritwood, N. D.

RUMELY
OILPULL
TRACTOR
LA PORTE IND

Guaranteed to burn kerosene under all conditions up to its full rated brake horsepower. Holds the present world tractor fuel economy record.

ADVANCE-RUMELY

Automotive Accessories *and* Implement Equipment

CLAMERT CHAIN REPAIR COUPLER

THE Clamert Mfg. Co. have recently put on the market a unique chain repair coupler which will be of interest to the trade. Of all the dangers a motorist encounters one of the most feared is that of skidding. To combat skidding chains are used and when they become broken they must be repaired if they would be kept efficient and safe. The Clamert couplers are designed to repair chains quickly and efficiently. They are built of steel, and case hardened, and, the makers say, they are the strongest links in the chain and are guaranteed not to injure tires. They are shipped one gross in a metal counter display box.

WEED MOTOR METER LOCK

THIS device is designed to fit all sizes of motor meters. It is a nickel-plated, mechanical lock that is inserted into the mouth of the radiator neck, and after passing the base of same, a cross-bar is straightened out, which is automatically locked by a locking pin in the tube of the lock. It permits the driver to insert water into the radiator in the usual manner and holds the cap and motor meter while so doing. The makers say it cannot be pulled out through the spout of the radiator nor manipulated in any way so that it can be removed. It is fastened to the stem of the motor meter and the same nut that comes attached to the motor meter is used in locking the lock on the stem. It can be installed, it is claimed, in five minutes. No set-screws that can be unscrewed are used, no adjustments are necessary and it does not change the appearance of the car. The manufacturers are the Barcy-Nicholson Co.

UTILITY SCREW PRESS

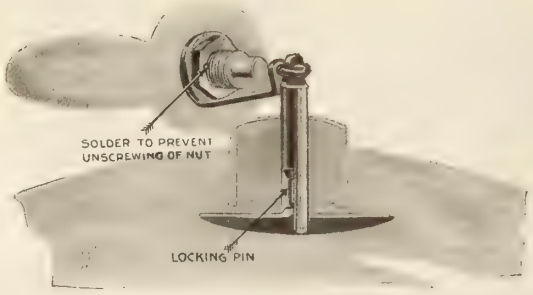
CARL PLETZ & SONS have placed on the market what is known as their No. 3 and No. 3½ utility screw presses. The illustration depicts the press, and, as stated, it is made in two sizes. This type machine is used to straighten shafts, bars, rails, beams, etc. It is also arranged to press in or out bushing, press gears or wheels on and off shafts and can form or bend metal in many shapes.

The bed is 4 ft. long, deep and heavily ribbed with a hole cored under the screw to permit work to drop through to the floor when pressed out. These cored holes permit the pressing of pieces in or off of long shafts. The two upright posts are strong enough to withstand ten times the load that can ever be applied.

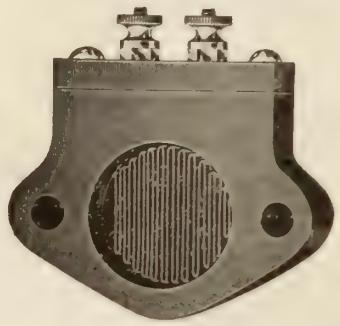
The screw is made of high-grade steel accurately chased. The steel screw pad fits on the end of the screw and the thrust is taken on a hardened steel and bronze washer, which is set in oil.

The hand wheel on the end of the screw is fitted with a handle so that the screw can be returned quickly. By using a four-foot bar in the hand wheel a pressure of about 20 tons can be secured. Following are the principal specifications:

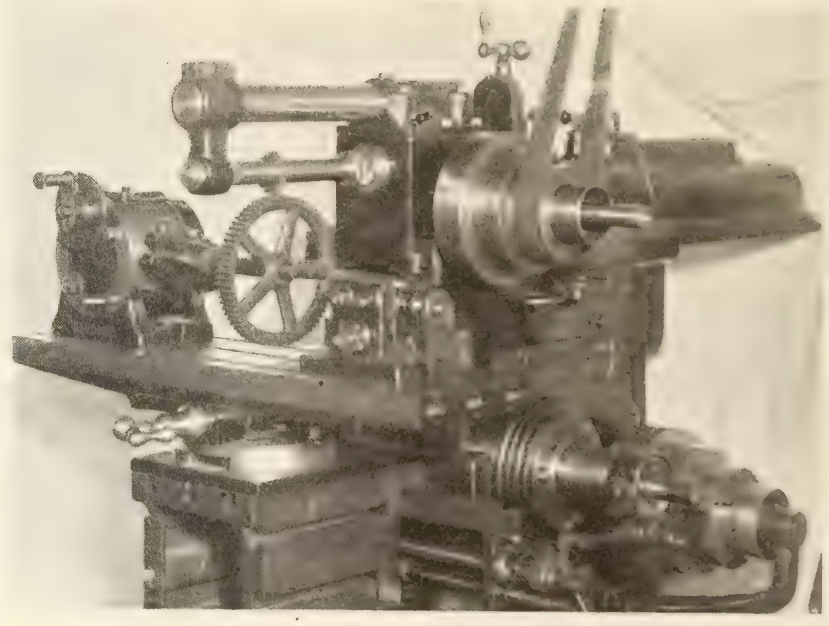
	No. 3	No. 3½
Size of screw	2″	2″
Pitch of screw	¼″	¼″
Distance between posts	12¾″	17¼″
Distance under screw pad	14″	20″
Length over all	4′	4′
Height with screw down	42″	42″
Weight	500 lbs.	600 lbs.



Weed Motor Meter Lock

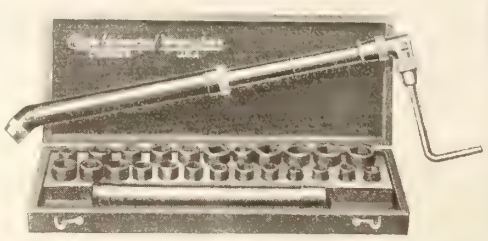


Bailey Electric Heater

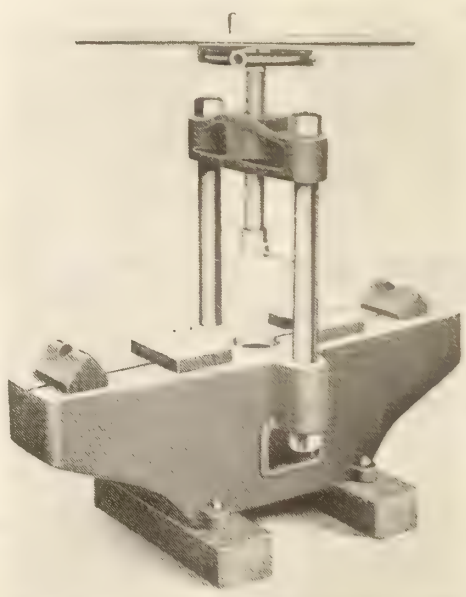


Shaper Milling Attachment

Clamert Chain Repair Coupler



Code Universal Wrench



Utility Screw Press

CODE UNIVERSAL WRENCH

THIS wrench is made of steel, hardened and ground and will fit the twenty-five different sizes of Code sockets. It is said to take the place of 150 special wrenches. It is 12½ in. long, but may be extended to 20 in., and will turn ratchet left and right, or a complete revolution. The wrenches are finished in enamel and nickel. The interchangeable parts of the wrench lock in position automatically. Price $22.00. It is manufactured by the Code Mfg. Company.

BAILEY ELECTRIC HEATER

THE Bailey electric motor heater heats the gas vapors, making a mixture which will ignite at the first spark. It causes action as though the motor were warm. The heating grate is made of ribbon wire without insulation, and is arranged so that the vapors must pass through. The ribbon cannot become red hot; therefore will not cause pre-explosion.

It is placed between the carburetor and the intake manifold. The carburetor fittings need not be changed. Only one wire to be connected. This wire runs through a push button switch to the battery, the other wire being grounded. It is manufactured by Asch and Company.

SHAPER MILLING ATTACHMENT

THE Tri-State Milling Machine Co. have placed on the market a milling machine attachment for use on shapers. The attachment is shown in the photograph, and the makers claim that this fixture is good for the following uses:

The attachments are made to fit any size or make of shaper, and in very short order the shaper is transformed into a miller by use of this fixture. The attachment is used to cut spur gears up to 18 inches diameter, also bevel and mitre gears, worm gears, keyseating shafts almost any size with one cut, woodruff keyseating, plain slab milling and form milling such as forming and shaping up dies and punches, profile work such as milling out circular slots, fluting reamers, taps, or similar work. This is said to be a powerful attachment, because it is worm driven by a triple cut worm and gear, running in a closed gear box filled with heavy oil, which lubricates every bearing from the inside of the gear box; all bearings are taper and provided with a lock nut, one on the inside and one on the outside for taking up the wear.

Following are the principal specifications: Milling head—Cast iron, heavily constructed, fitted for ram slide and fastened with gib key. Pulley—four step cone, 4, 6, 8 and 10 inch, 2½ inch face. Bearings—bronze, taper adjustable for wear. Drive—worm and gear, hardened steel, runs in oil. Drive shaft—nickel steel, hardened steel thrust bearings on each side of worm. Runs either right or left. Spindle—Hollow high carbon steel; 1¼ inch diameter. No. 4 standard Morse taper. Nose threaded for chuck. Arbor—Nickel steel, 1 inch diameter. Only one furnished. Table—3 feet long, 3 T-slots, round base permitting turn at any angle, cross feed 7 inches. Table fits on shaper base, giving quick adjustment.

Drawing made from photograph showing battery of Case 22-40 H. P. tractors working near Oskaloosa, Iowa. Case 10-18 and 15-27 tractors can be equipped with rubber tires for municipal and industrial work.

A Spring Sales Opportunity Too Good To Overlook.

Case Road-Building Machinery

Steam Road Rollers	2 sizes
Rock Crushers	2 sizes
Mounted Rock Bin with Screen	15-ton
Road Graders	3 sizes
Road Drags	3 sizes
Road Rooters—(Iron or Steel Beam)	275 lbs.
Road Sprinkler	12 Bbl.

ALONG about this time "live" implement dealers everywhere are lining up prospects for new farming equipment with which to handle the spring work on time. Case dealers are energetically working up sales for **Case Kerosene Tractors, Grand Detour Tractor Plows and Tandem Disc Harrows.** If you are a Case dealer don't overlook, however, that other great opportunity for spring volume—the sale of **Case Road-Building Machinery.**

The breaking up of winter will leave many roads in your community in bad condition—both country roads and city streets. Naturally you are interested in seeing such roads and streets improved. Perhaps your influence will help to this end. Incidentally, as a Case dealer you should exert your sales ability to indicate the most economical and efficient method of bringing about such improvement. By doing this you will be benefiting your community measurably, and at the same time you will be taking advantage of a spring sales opportunity for Case machinery that is too good to overlook.

J. I. Case Threshing Machine Company

Dept. B215 - Racine, - Wisconsin

Toronto Branch—345-9 Dufferin Street, Toronto, Ont.

CASE

TRADE MARKS REG U S PAT OFF. AND IN FOREIGN COUNTRIES.

ROAD MACHINERY

NOTE: We want the public to know that our plows and harrows are not the Case plows and harrows made by the J.I. Case Plow Works Co.

WEAVER RIM ANVIL

THE Weaver rim anvil is constructed to handle rims of every type and size. It is designed to be fastened to the work bench by a heavy bolt, which passes through an opening in the anvil, as shown in the illustration, with the forward portion projecting over the bench. The flange on the bottom of the anvil forms a stop, insuring the proper mounting of the anvil.

It is provided with several grooves and faces to fit the various kinds of rims. Two hand tools, one with straight the other with curved edge, are supplied to open up grooves on lock ring and clincher type rims. Straightening and riveting of rims is considerably facilitated by the use of this tool. It is made by the Weaver Manufacturing Company.

CANEDY-OTTO MOTOR STAND

THE new Canedy-Otto motor stand, for Ford and Chevrolet motors, permits the entire power plant, after being removed from the chassis, to be securely fastened, by means of a special yoke and spindle, in less than thirty seconds. This fixture is particularly developed, the makers say, and is so constructed that all valves are accessible to the mechanic, a feature not found in other motor stands of its type.

By its special construction, the motor can be completely revolved, making any side accessible, being held in the desired position by means of a friction stop, located on top, within reach of the operator. The motor is held in position on the stand by a special yoke and spindle securely fastened by a nut and washer which not only eliminates the fastening of bolts into the motor but gives access to the main bearing bolts.

The base of the stationary stand is drilled so that it may be bolted to the floor. It is manufactured by the Canedy-Otto Manufacturing Company.

KEYSTONE CYLINDER REBORING TOOL

THIS reboring tool comprises a jig or fixture to be bolted to the engine block over the cylinder to be rebored, and a Keystone heavy body reamer with high-speed blades.

The threaded shank, with which this tool is provided, the makers claim, insures an accurate and uniform feed and prevents "hogging in" or sheering away from the true bore. The tool is operated by a wrench.

It has an adjustment of 5-16 inch and an accuracy of .0001 of an inch can be maintained. It is also made with a Morse taper shank for drill press work. The shanks are interchangeable. It is manufactured by the Keystone Reamer & Tool Company.

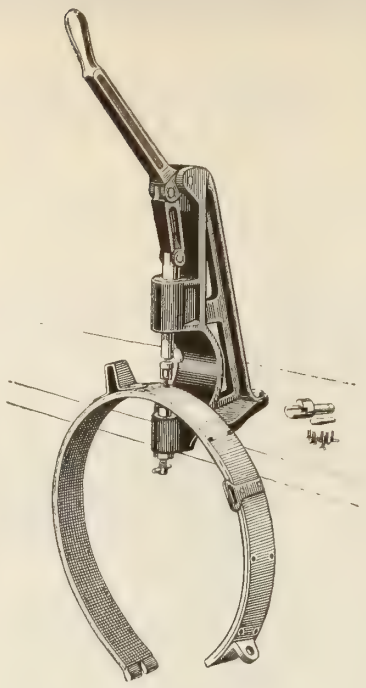
BARRETT MOTOR STARTER AND PRIMER

THE Barrett motor self starter, manufactured by the Barrett Motor Starter Manufacturing Company, is designed to fit all Ford cars.

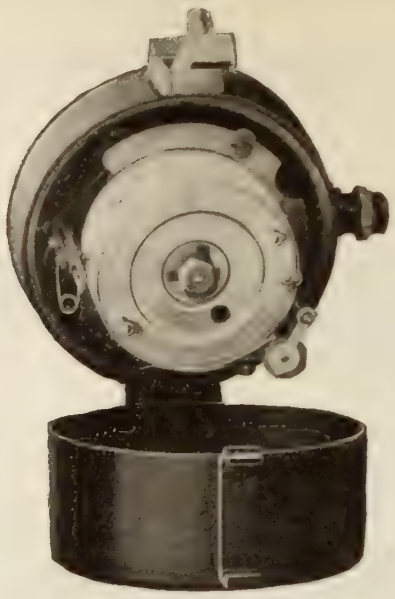
The starter is purely mechanical, not electrical, and works without check valves, washers or springs. It is simply a lever inside the car which is connected by substantial rods to a ratchet on the crank shaft. A pull on the lever turns over the motor as would be done by the ordinary crank handle. There is also a kick plate which makes it impossible for the operator to get a broken arm or wrist through backfiring.

With the starter goes a very ingenious primer. This primer is operated also from the driving seat, and consists of a pump which forces the gasoline from the feed pipe directly through the muffler into the cylinders. This ensures quick starting in any kind of weather, providing, of course, that the ignition is otherwise perfect.

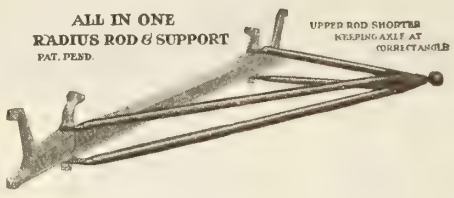
It is being offered on the Canadian market by the Imperial Agencies, Toronto.



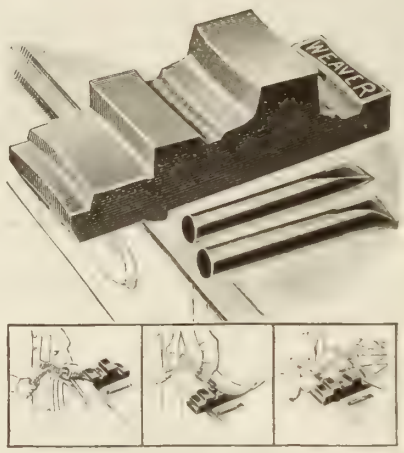
Lewis Universal Brake and Band Riveter



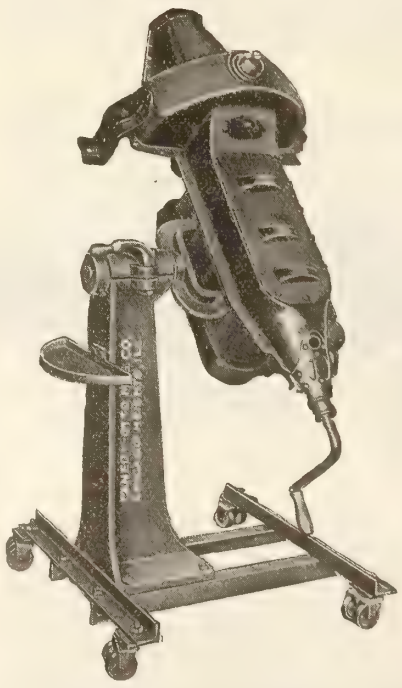
The Recordograf



Radius Rod and Support



Weaver Rim Anvil



Canedy-Otto Motor Stand

Keystone Cylinder Reboring Tool

RADIUS ROD AND SUPPORT

THE All-in-One radius rod and support, manufactured by the Tungsten Manufacturing Company, is designed for all Ford cars and trucks.

It is made from four pieces of heavy steel tubing, welded into one solid piece, the ball being forged out of the tubing, making a rigid one-piece support for the front axle, keeping it at the proper angle, making it easier to steer and steadying the steering wheel itself. The makers claim it prevents danger of accident through breakage—a frequent occurrence with the ordinary rod. It holds the car in the road, prevents axle from buckling in making short, quick turns and prevents excessive wear on front bearings and bushings.

The upper rods are made slightly shorter, giving the axle a correct tilt, it is claimed, and keeping it permanently in that position. It requires no extra bolts or clamps.

LEWIS UNIVERSAL BRAKE BAND RIVETER

CUTTING out the old rivets and replacing brake linings with split brass rivets is the purpose of the Lewis universal brake band riveter. The dies on this machine are designed so as to curve the points of the rivets into the lining, well under the surface. Rivets so applied, the manufacturers claim, will not break off nor score the brake drum. The operation is simple and the machine will handle practically all types of bands, including the Ford transmission band, and is provided with proper means of quick adjustment for various lengths of rivets.

For riveting, place the rivet holder in ram and lower die directly underneath. Then pull down the handle, place the brake band and thickness of lining to be used on top of lower die and turn the adjusting screw at bottom until the brake band is in direct contact with the end of rivet driver. Insert the proper length rivet in holder, pushing the rivet in from the front.

For cutting out old rivets, insert chisel in ram with the flat side toward the front. Then place cut-off die in hole directly below chisel and pull down the handle all the way, adjusting the bottom screw until the point of the chisel is at the centre of the flat side of die block. Now release the handle and place brake band in position with the steel band towards the front. It is made by the J. R. Lewis Company.

THE RECORDOGRAF

THIS device is designed for recording to a minute, or the fraction of a mile, the entire operation of the motor vehicle to which it is attached for each twenty-four hours. It is specially intended for motor trucks but can be installed on any rotary mechanism where a record of the machine's movements is required. The makers say it is simple, accurate and tamper-proof and writes an indelible record of each movement or stop of the truck, permitting a detailed analysis of the vehicle's operation, including all distance, time, speed and stops.

The instrument consists of three essential parts: the clock, the recording device and the pencil mechanism. The clock is of unusually heavy construction and is not in any way affected by vibration. The recording mechanism, which is driven by a flexible shaft, is merely a worm shaft driving a worm wheel; this in turn rotates an eccentric cam. The pencil mechanism is actuated by the eccentric cam and travels in a guideway. The tape is run from the tape holder and threaded into the clock drum. The combination of clock, recording mechanism and pencil mechanism produces or he tape a clear, mechanically accurate record of time, distance, speed and stops. It is made by the Canadian Taximeters, Limited.

CHAMPION MERCHANDISER

IN furtherance of its service policy the Champion Spark Plug Co., of Canada, Ltd., Windsor, Ont., has developed a "Merchandiser" in the form of a cabinet which is equipped to carry a supply of every type of Champion spark plug made. Individual compartments separate the various types, making it a simple and easy task for the dealer to select the type of plug called for, and with the aid of the index charts on the face of the merchandiser quick and accurate service in the sale of any spark plug can be made, it is claimed, whether it be for passenger car, truck, tractor, motor cycle, motor boat, farm or stationary engine.

The merchandiser is 31 inches long, 15 inches high and 11 inches deep, and its neat appearance makes it a handsome addition to any store whether placed on counter, show case or shelf.

WODACK PORTABLE ELECTRIC DRILL AND GRINDER

THE Wodack Electric Tool Corporation, 23-27 Jefferson avenue, Chicago, Ill., are offering to the Canadian trade a portable electric drill and grinder, for which they claim special features.

The motors of their own design and manufacture are said to be self-adjustable in speed to the size of the bits used. The switch located in the top handle and operated with the palm of the hand is of the make and break type. As pressure is released switch shuts off current, thus avoiding drills running empty and ensuring operator having full control. The gears are of chrome nickel steel and motor windings are protected from injury by liquid tight grease compartments.

It is claimed that drills cannot be stalled when driven at their rated capacity. They are made in 4 sizes, and the ⅝ in. size is made in two speeds.

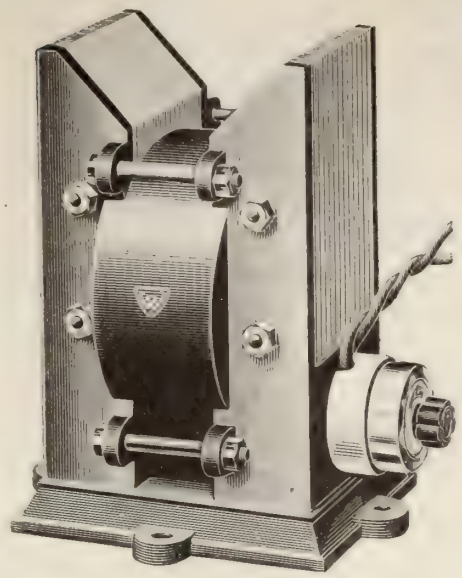
The grinder is designed for smoothing down castings, also for buffing and polishing. The motor is completely enclosed and is fan cooled. It is furnished with 10 feet of cord and an emery wheel size 4 x 1 x ¾ in.

TEMME HEATER

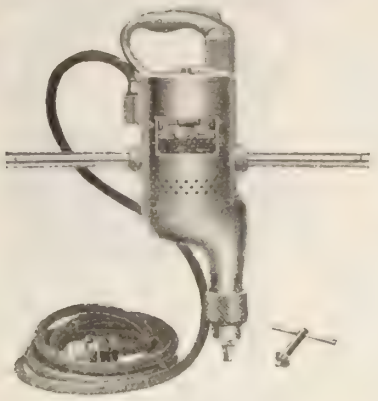
THIS automobile heater, manufactured by the Temme Spring Corporation, is designed to fit any car regardless of size or construction. The valve used is adjustable to fit any exhaust pipe. The floor plate of the Temme heater fits flush with the floor. There is a continuous circulation, the makers say, which produces a steady flow of warm air that fills the car. The heat regulator is conveniently located on the cowl apron or dash. It adds to the appearance, it is claimed, and is never an obstruction. Because the floor plate is in no way connected with the superheated coils of the radiator, the makers claim, all danger of fire is eliminated.

The radiator is constructed of a one-piece casting, with no joints or bolts to loosen.

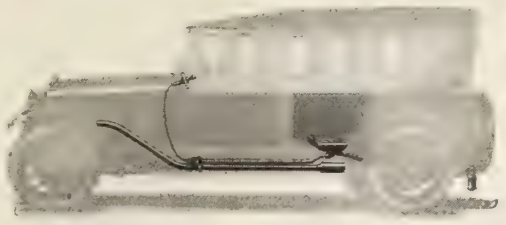
The Mono-coil control tubing runs from the heat regulator on the instrument board to the valve on the exhaust pipe. The valve is adjustable to fit any size of motor exhaust pipe. When the controlling valve tongue is closed, being recessed in a special seating, it fits flush with inside of the exhaust pipe. This makes it impossible, it is claimed, for the exhaust gas to force the valve tongue open and heat the car when heat is not wanted. A patented spring tension locking device prevents this tongue from rattling. Heat from the exhaust is used and the radiator is designed with many fins to insure a maximum radiation of heat.



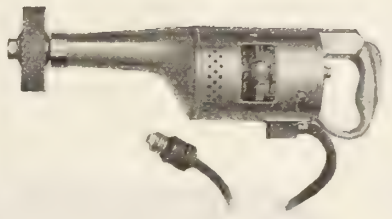
Induction Armature Tester



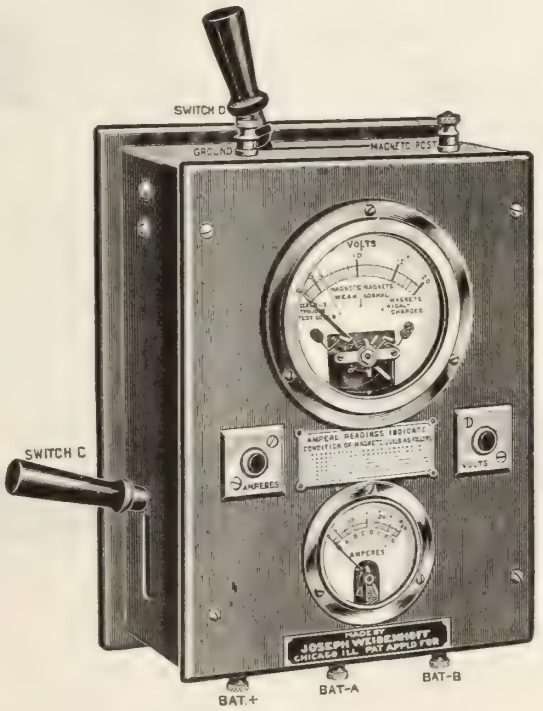
Wodack Drill



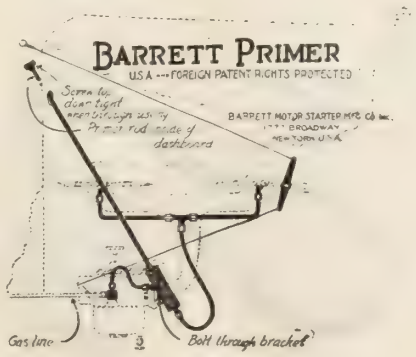
Temme Heater



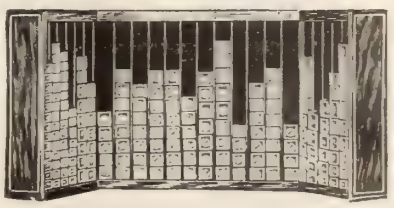
Wodack Grinder



Magneto Doctor for Ford Cars



Barrett Primer



Champion Merchandiser

KANT SLIP WRENCH

A NEW wrench is being offered to the trade by the Allan-Diffenbaugh Wrench & Tool Co., Baraboo, Wisconsin.

The makers claim that this wrench differs from other wrenches in mechanical principles in that the strain all comes on the shoulder and not on the pin. Another advantage claimed is that the fulcrum is close to the load, and the instantaneous sliding adjustment on gripping handles saves time.

It is said to be equally useful for pipe or nuts, to take the place of a pipe wrench, nut wrench and plier in one tool, and for working in close quarters. the makers state, it cannot be excelled.

The size made is 8 inch, jaw opening range is ¾-inch, and handle forms a screw driver.

INDUCTION ARMATURE TESTER

THIS instrument provides a dependable and quick way of testing any size or style of armature for open circuit, short circuited coil or grounded coil.

As shown by the illustration, it is substantially built to withstand the hard usage it will receive on the busy electric service man's test bench.

Particular care has been taken, the makers say, to protect the winding against injury by covering it entirely with a metal casing. It is so designed that should the coil at any time become defective, it can easily be replaced.

This coil, with laminated pole pieces (which are made of the best grade of electrical steel, carefully insulated from each other), gives the greatest possible amount of induction with the least current consumption.

Furnished complete with switch and several feet of extension wire connected to same. Made by Joseph Weidenhoff.

MAGNETO DOCTOR FOR FORD CARS

THIS instrument removes any number of shorts in the coils and remagnetizes the magnets without removing the fly wheel housing. Does the same work in less than 15 minutes, the makers say, heretofore requiring from 8 to 10 hours.

Ford magnets attract all the loose metal pieces; such as nuts, screws, cotter pins, chips, etc., which come near them. Then, they are deposited on the connections between the coils, where they remain, causing the coils to become short circuited. These short circuits are the cause of the magnets becoming weak, which, in turn, cause difficult starting, dim lights, loss of power, poor mileage, carbon trouble, and general dissatisfaction. Doing the work in the old way, you had to tear down the motor to get at the coils and magnets. Then you had to hunt for the metal pieces which caused the shorts, and pick them off by hand. After this you removed the magnets, one by one, and re-magnetized them. In addition to all this work, you had to assemble the motor again, but it often happens that one of the shorts is overlooked. Then all the work must be done over again.

The Magneto Doctor, it is claimed, will accomplish the same results in less than 15 minutes, and without as much as touching a bolt or screw on the motor or magneto housing.

To remove any number of shorts, and re-magnetize all of the magnets, simply connect a storage battery to the three terminals on the bottom of the instrument, and one of the top terminals to the magneto post, and the other one to a ground.

A compass for polarizing the magnets with the coils, also test leads with proper terminals, are included with each instrument, as well as complete instructions. It is manufactured by Joseph Weidenhoff.

ARMATURE TEST UNIT

THIS unit is a tool designed for the purpose of testing short or open circuits, and also grounds in any type of motor or generator armature used on starting and lighting systems.

It is practically universal, the makers say, and will test armatures ranging from 2 in. to 4¼ in. in diameter.

For short-circuit testing the unit is connected to 110 volt alternating current, the armature mounted in "V" and slowly turned by hand. A piece of flat steel is held above the armature approximately 1 1-32 in. If there is a short circuit in the winding or commutator this blade will be attracted to the armature over the slot containing shorted coil.

An indicating lamp and a set of test points are provided for locating grounds on the armature. Field coils, frames, assemblers and other parts of electrical units can also be tested in the same manner for location of grounds. An attachment plug and six feet of cable are furnished with the unit. It is manufactured by the Service Products Company.

MOTOR STAND

THE Service Products Company have recently placed on the market a new motor stand. The stand is so constructed, the makers say, that practically any type of motor completely assembled can be clamped in place by a simple locking device, and turned in any position or angle. The motor may be disassembled and assembled on the stand without the necessity of removing the block itself. Base is of heavy ribbed cast iron; column of 3-inch wrought. It eliminates all danger of the motor block being damaged by falling.

The specifications are as follows:

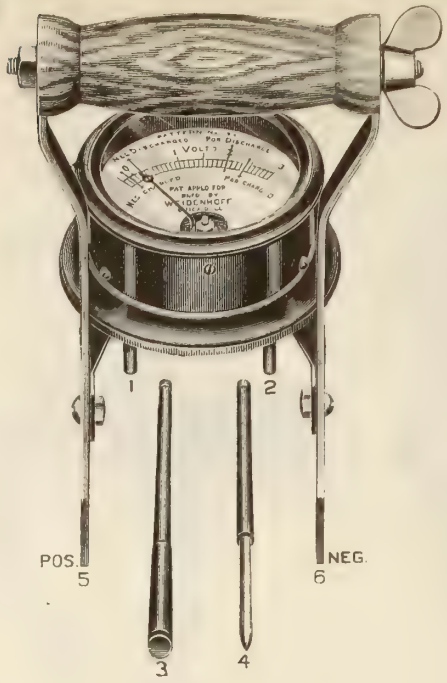
Size of base, 27 x 27 inches; size of apron, 7 x 15 inches; height, 41½ inches; net weight, 175 pounds; shipping weight, 250 pounds.

EVER-STAY METAL

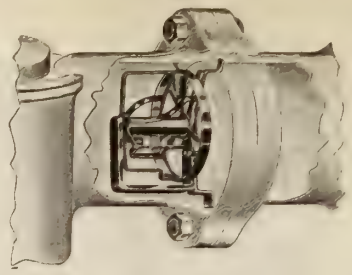
EVER-STAY metal is claimed to permanently repair scored cylinders, cracked water jackets, cylinder heads, crank cases, etc., and can also be used for filling holes in castings, or building up metals which have been broken and parts or pieces lost out. This metal contracts and expands practically the same as cast iron, has high heat resisting qualities and, the manufacturers state, will not peel or vibrate loose. This metal can be applied with a Presto torch or an oxy-acetylene torch with flame reduced, or with city gas and air torch. The Ever-Stay Sales Co., Omaha, Neb., is the distributor for this product.

RIE NIE VEE-ROUND BELTS

THE Rie Nie vee-round belt is something entirely new in the way of a fan belt for V pulleys. It is scientifically constructed, the makers say, and made of special tensile strength fabric, all cut on the bias. A special rubber compound is used to protect the fabric and hold the belt intact. As the belt passes over the pulley at the peak the bending causes it to widen and wedge itself into the V. This feature does away with belt slippage and makes it possible to run the belt rather loose, so as to eliminate all danger of burning out the bearing cones. The belts will always properly seat themselves and have sufficient gripping power to drive the fan, or both fan and generator, when so required. On account of special construction they are self-adjustable to the several angles of pitch in V pulleys. They are made endless in all standard sizes. The makers are the Durkee-Atwood Company.

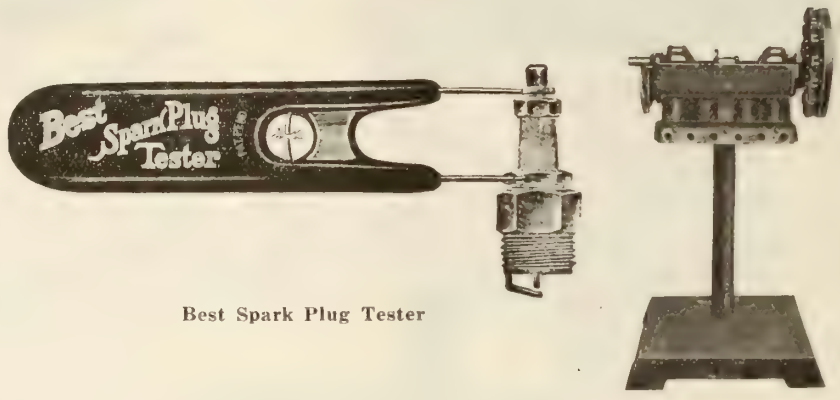


Weidenhoff Battery Tester



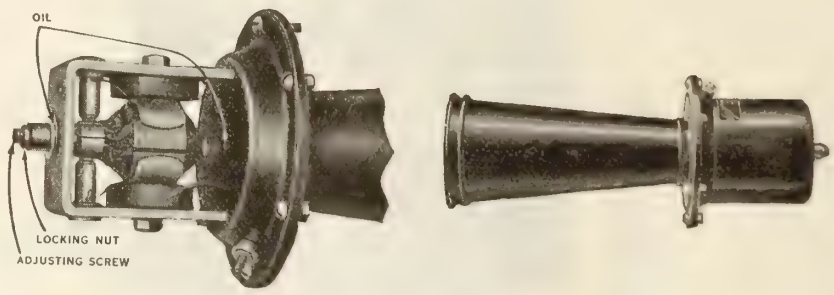
Bailey Whirling Atomizer

Armature Test Unit



Best Spark Plug Tester

Motor Stand



North East Horn

Lox-On Junior Air Chuck

Vee-Round Fan Belt

LOX-ON JUNIOR AIR CHUCK

THE Lox-on Junior is the latest addition to the Lox-on family. It works in conjunction with an air pump. It is simple to operate and the makers claim that it doesn't rub the rubber, nor can it be jammed. It slips over the valve stem and then grips it tightly by merely bringing your thumb and forefinger together. The makers claim that a pump equipped with the Lox-on Junior renders greater efficiency, because it works without any lost motion. It is made by the Automatic Safety Tire Valve Corporation.

BEST SPARK PLUG TESTER

THIS device can be used to test the action of any make of spark plug without removing the plug from the cylinder. It is made of a substantial and durable moulded composition, which the makers claim will not wear out. Simply by touching one wire of the tester to the terminal cap and the other to the packing nut at the base of the plug, as shown in the cut, you learn at once if the plug is O.K. The tester does not short-circuit the current like some methods of testing. It is manufactured by the Perkins Spark Plug Tester Corp.

BAILEY WHIRLING ATOMIZER

THE Bailey whirling atomizer, it is claimed, reduces the expense of running an automobile by greatly increased mileage. The whirling of the fan is caused by the suction of the motor. The fan is three-bladed, reinforced by six arms, each arm being in a different plane. It breaks up the globules of gasoline, it is claimed, making a perfect mixture possible. The makers say a more powerful, more quiet, smoother running engine, using less gasoline per mile, is obtained by this device. It is easily attached and fits between the carburetor and manifold. The atomizer is made in sizes to fit all cars. Made by Asch and Company.

WEIDENHOFF BATTERY TESTER

TO keep the automobile operating at full efficiency, accurate and reliable service must be rendered the storage battery. To take care of this work the Weidenhoff Triplex battery tester has been developed.

The Triplex battery tester consists of a specially designed voltmeter, calibrated for direct voltage readings, voltage drop readings, and for cadmium tests. A shunt is concealed in the handle. This is connected with the pointed terminals, 5 and 6, by tightening the thumb screw, and is disconnected by releasing it a few turns.

For taking direct voltage readings of a cell, release the thumb screw a few turns and place the pointed terminals, 5 and 6, on the positive and negative terminals of the cell.

With the thumb screw still in the released position, and the pointed terminals 5 and 6 on the positive and negative terminals of the cells, as before, the voltage drop can be measured by stepping on the starter switch.

If a battery loses its charge quickly when the cells are in good condition the starter can be tested for grounded coil or short circuit by connecting the shunt in series by tightening the thumb screw, and then taking a reading of each cell for voltage drop.

When the defect is in the cells the cadmium test should be used on both plates to locate the trouble. These tests are made by attaching the cadmium leads 3 and 4 to the terminals 1 and 2 on the meter. Full instructions for making cadmium tests are given on page 19. Manufactured by Joseph Weidenhoff.

NOW IS THE TIME TO SELL

By J. F. JONES
Manager Domestic Sales, I.H.C.

THIRTY minutes after the armistice was signed there was a general uprising of prophets who predicted that the bottom would fall out of everything immediately. It has been two years now and we are still in business, doing our best to serve our dealers and customers. We are just finishing a fairly satisfactory year, we are at this moment delivering seasonable goods, and we are looking forward to 1921 for an even greater year of successful effort from every man in the organization.

There are again plenty of prophets who say business is going to ruin and that all kinds of bad conditions are going to keep us from doing our duty and performing our service. We believe they are false prophets and that no real business men will listen to them. We believe pessimism was never made welcome for very long by the true salesman or merchant and that the present is not going to offer an exception.

A Real Business Man

We were recently reliably informed of an implement manufacturer who had received a number of cancellations from such of his dealers as had been stampeded by the predictions of the false prophets. They had all sent in letters full of pessimism saying they could not take the goods they had ordered because they did not think they could ever sell them. This implement maker at the time had orders in with the steel companies for hundreds of thousands of dollars worth of materials which he could have cancelled or suspended because of the cancellations he had received. But being a real business man, able to see beyond the present moment, he would not even consider doing this. He wrote his dealers and jobbers telling them he was not going to accept their cancellations, but that in their interest as well as his own, he was going to hold their letters in abeyance for the time being, knowing very well that by next spring they would want every machine they had ordered. He told them he was going ahead to manufacture the machines and do his best to have them ready by the time he knew they would be wanted.

We were not told who this man was, but we compliment him, and we compliment everyone in the trade who has foresight enough to take the same view of the situation and go ahead making good on our responsibility to the farmer and to the world. There never has been and never will be a permanent depression so long as the farmer has good crops. And every man in the implement industry must remember that the growing of crops and the feeding of the world must go on, has to go on, at an even pace. We are dealing with essentials and we have to go ahead no matter what anyone says or prophesies to the contrary.

Every individual should know of an experience this summer of a large company which manufactures phonographs, records, and music. This company along in May faced a market condition which experts in the trade and all its competitors said was fatal. Everybody said the business in that company's line was dead, that the people had stopped buying, and that nothing could be done that would make them buy these commodities. But the man in charge of this company's business refused to believe such reports. While other people were believing them, he took no stock in them at all. In fact, this company's whole sales organization made themselves over completely, took on an entirely new lease of energy and enthusiasm, and waded into the market stagnation to sell goods. The results were that this sales organization doubled their company's business over anything it had ever had before, good times or bad. And furthermore, this sales and dealer organization brought their company up from a poor second in its industry to a good first, so that now it is the leader in its field.

Go Out and Find Them

We never did and never will believe in selling a man something he doesn't want and doesn't need; we do not believe this is the purpose of salesmanship. But the customers of that phonograph company are to-day getting enjoyment and profit out of the instruments they bought during the time when the prophets said they would not buy.

And our industry is even more essential and vital to the happiness and welfare of the people. We can afford to do only one thing to-day—go out and find all the people in every territory who need our goods and sell them what they want.

We do not believe it would be possible to hire enough salesmen to continue to sell something which the people do not need or want, but we do believe that there never was a time when conditions were so tight that a real business man with a clear insight into the needs and possibilities of the hour could not sell the people what they need. It is just as essential to the prosperity of the country that every acre of land be cultivated during 1921 as during 1918-19-20, or any other year, and it is just as much more profitable in proportion now as ever for the farmer to use the proper equipment for conserving his soil and increasing his yield. Regardless of the momentary depression, we believe the far-sighted merchant is the one who pursues his even course and as usual puts himself in a position to serve his trade and his community.

WITH LIBERTY MOTORS

L. LOGIE, formerly general sales manager of the Chalmers-Maxwell Companies of Canada, and more recently associated with the tractor business in Toronto, has been appointed district supervisor of Canada for the Liberty Motor Car Company, of Detroit.

WOULD IMPOUND CARS

INCLUDED among several suggested amendments to the Motor Vehicles Act which the Toronto City Council will ask the Ontario Government to ratify at the present session is one calling for enactment of a law similar to one that obtains in the State of New York, in which all Canadian motorists who figure in traffic accidents have their cars immediately impounded, and are compelled to deposit an adequate bond as a guarantee that they appear for trial in event of any ensuing action. As it is at present, if an American motorist becomes involved in a traffic accident in Ontario, there is no law that will permit of the authorities impounding that motorist's car or forcing him to deposit a bond.

ALBION MOTORS, LIMITED

WHAT will be the largest garage in Montreal and one of the largest truck garages in North America is that of the Albion Motors, Ltd., at 63 Prince St. The premises occupied by the Albion were once the central station of the Montreal, Light, Heat and Power Company, and the building is one admirably adapted to the use which is now being made of it. The structure extends the whole distance from Prince to Queen streets, occupying 28,000 square feet of floor space and affording over one million cubic feet of shop and storage space. It was opened last May by the Albion Motor Co., and the place has been partly occupied by other interests since then, but with the running out of leases this May it will be entirely occupied by the present owners, the Albion Company having purchased the property.

EXCELLENCE
2-PIECE PISTON RING

Now, When Every Ounce of Power is Needed

The Only Perfect Piston Ring

Never Breaks When Putting On

Wheels are skidding on slippery city streets and bumping and racing in country ruts. Deep snow, slush, frost—all devourers of power, make the motorist's days unhappy. Gasoline seems to be just evaporating and nobody getting anywhere.

Right now motorists—your customers — need every ounce of power that can be developed.

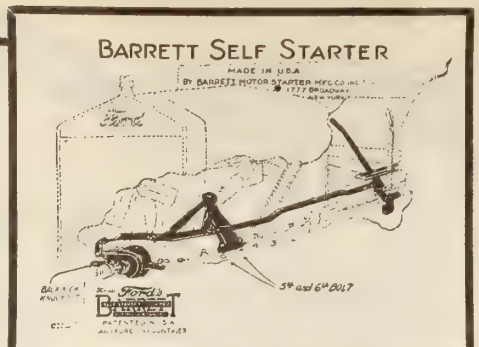
And how are they going to use that power if it's slipping by inferior piston rings?

They need "The Only Perfect Piston Rings" — the two-piece, two-way expanding ExcellencE. Then they'll get every ounce of power bang up against the piston head where it becomes an actual driving force. No gas can get by ExcellencE Rings, no compression is lost.

LAMONTAGNE LIMITED
Wholesale Dealers in Automotive Equipment
QUEBEC MONTREAL WINNIPEG

Thousands of Ford Owners Will Want Self-Starters Now!

Now that Fords are being equipped with self-starters at the factory, owners of previous models will be anxious to have their cars brought up to date. There never was a time when self starters for Ford cars could be sold with as little effort as at present. Especially does this apply to the BARRETT SELF-STARTER, which besides having many mechanical advantages, sells at



Less than 1/3 the price of electric starter

The Barrett has the additional inducement of the Barrett Primer and Choker which is given free with every Barrett Starter. The starter is guaranteed for five years, and is applicable to all Ford models, including Ford trucks.

A big proposition that should be investigated by every live automotive man.

Write to-day for full description and particulars of agency to the Canadian representatives.

IMPERIAL AGENCIES, 81 Victoria St., TORONTO

A financially sound and well-established jobber can secure Canadian selling rights.

CYLINDERS

REGROUND

PISTON RINGS and PINS

Made on short notice and with the durability which means economy. State make or model of car when inquiring.

Advance Machine & Welding Co.

177F Canning Street, Montreal **Up. 4416**

Established 1907

WE GIVE

"Quality and Service"

IN

TRACTOR and TRUCK STEEL CASTINGS

Joliette Castings & Forgings Limited

Head Office: Transportation Bldg., Montreal

Works: Joliette, Que.

BUILD BUSINESS ON FACTS

By G. C. WEYLAND, Vice-President J. I. Case Plow Works Company

THEORIES are interesting—after the stern facts of business hours are laid aside for the day and we relax and dream and build beautiful air castles.

Facts—cold facts—must be reckoned with during business hours. These are the things we must use where our bread and butter is at stake.

For example: Necessity led me into a shoe store a few days ago. The clerk fitted me with a shoe I always wear. I reached for my pocketbook, confident, after having read every day of dropping prices, that the bill would be less this time. And what did I hear the clerk say? He named a price 20 per cent. higher than I paid last spring for the same shoe. That was what I call a stern fact.

Now I see many bargains advertised in papers and in show windows. I hope that many buyers do get many bargains. To me, though, these are theories. The shoes that I bought and actually paid for actually advanced in price, and I do not accuse anyone of profiteering. I have no proof. There are some facts which everyone in the metal business knows. The price of pig iron advanced more than 213 per cent. in the last four years. The prices of steel more than doubled. Those who are familiar with manufacturing conditions know that coal, pig iron, labor transportation and other things affecting the manufacture of agricultural implements are all on the high market. The prices paid for malleables advanced about 400 per cent. in that period. The cost of labor more than doubled. The prices paid for farm machinery have not doubled, though the prices paid for many farm products have doubled.

These are facts, not theories. The theory of an immediate reduction in the price of farm implements is unsound and not supported by the facts. These facts should be passed on to the farmers of America. They are the men of good common sense and like facts. If we all understood these problems as we should when we know the facts there would be less of unrest and dissatisfaction. There would be no bolshevism.

When a man advances the theory that farm implements are due for an immediate drop in price, ask him for the facts. He can't produce them. He merely guesses that the wish he has in mind will come to pass.

Are you a theorist or a matter-of-fact man? Most of the farmers of America are hard headed matter-of-fact men. When told why machinery prices cannot come down they need no other reason. Stick to facts when you are talking to the farmers of this country, and see that they know the facts.

NEW AGENCY ESTABLISHED

A NEW agency has been established in Montreal for automobile accessories by A. J. Hopkins, formerly with Fairbanks-Morse & Co., at 392 St. James St. Mr. Hopkins had an exhibit of his various lines at the Montreal Motor Show, including Edgar C. Guthard Co., Billmont wrenches; Clover Mfg. Co., grinding compounds; Locktite Patch Co.; David W. Onan, motor generator testing equipment; Casey-Hudson Co., Black & Decker Mfg. Co., electric drills and compressors.

DEPRESSION MERELY TEMPORARY

"THE passenger car and truck are to-day too essential in the business world to feel any but a temporary depression," says R. H. Jeffers, vice-president of the Firestone Tire & Rubber Co. of Canada, in a letter to M.T.I. "Canada's buying power," Mr. Jeffers continues, "is sufficient to take care of all the products of Canadian manufacturers in 1921. What is necessary is some real sales effort by manufacturer, jobber and dealer. Instead of business walking in, we will now have to go out after it.

"Under these conditions it is all the more essential that business be done efficiently, and as far as transportation is concerned and particularly short hauls, the answer is the truck and passenger car. The continued and increased use of both is assured. This naturally means a steady demand for tires and other accessories.

"Other factors like the completion of the good roads program will be of material assistance to everyone in the automotive field. Everything considered, 1921 should be a good year."

NEW WIRE FENCING MANUFACTURER

THE Blashill Wire Machinery Co., Montreal, expects to be manufacturing wire fencing by the early summer months. Mr. Blashill, manager, stated that this project was contemplated some two years ago, but owing to scarcity at that time it was abandoned for the time being, the firm devoting their time to the manufacturing of wire machinery and other machine tools. Deliveries of wire are now more easily obtained and it is hoped to have the plant turning out wire fencing of all kinds before the summer is well advanced.

BROUGHTON'S BLOWOUT BOOTS BIND BAD BREAKS AND BRUISES BEST

Hinged steel lining cat wearing easiest riding. Order early. Packed in cardboard boxes, two boots to the box.

Sold by us or any Canadian Jobber.

The Geo. H. Broughton Co.

126 Wellington St. W., Toronto, Ont

Liberty Grain Blower

Fan mill and elevator combined, at half the cost of an elevator. Loads into box car, wagon or bin. One man and gasoline engine does the work of 3 men without shoveling or lifting.

Elevates, Airs, Cleans

scours and polishes wheat or oats, making it test higher and bringing a better price. Light, durable, easily moved. Particulars free.

LINK MFG. CO.
Dept. 710, Portage La Prairie, Man.

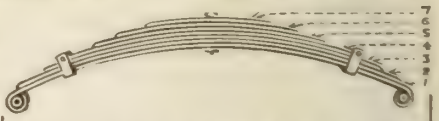
COZENS & MAYNARD AUTOMOBILE and TRUCK SPRING SERVICE STATION

We can give you quick, accurate service on any type of spring for any car or truck. We can fit any car. We can repair any spring.

We also repair and build special springs to order—any type.

We straighten axles and chassis frames on all makes of cars and trucks.

A guaranteed service covering every make of car or truck — a service highly profitable to you.

4 to 6 WOOD STREET, TORONTO

AUTOMOBILE SPRINGS

The Guelph Spring and Axle Co.

Guelph - Ontario

Manufacture

AUTO SPRINGS
ALL KINDS
HIGHEST QUALITY

ENCOURAGING FINANCIAL POSITION OF CANADIAN FARMER

WITH the opening of the new year the Financial Post, of Toronto, sent out a letter of inquiry to bank managers in over 600 centres from Halifax to Vancouver, with the object of determining:

(1) The extent to which retailers are reducing their stock on hand.

(2) The extent to which these retailers are liquidating their debts to the bank.

(3) The extent to which farmers are holding back their products for higher prices.

(4) The extent to which this attitude of the farmers is affecting retailers' profits.

Replies indicated that a number of retailers had not as yet made reductions in their prices in keeping with wholesale and manufacturing reductions, but liquidation was proceeding fairly well. Few financial embarrassments, generally speaking, are looked for.

Farmers in some districts are holding back their produce, but this is not so serious in relation to the Western wheat crop as earlier rumors indicated.

Bank managers state that farmers generally have husbanded their profits and are in a position to buy staples, though showing a reluctance toward luxuries.

This has significance for the automotive dealer handling implements, tractors, motor trucks and gasoline engines. These are things the farmer must have if he would cut down his labor and transportation costs to coincide with the decreased price of his produce.

The Dominion Bureau of Statistics report the total value of 1920 field crops to be $1,636,664,900, as compared with $1,452,537,500 in 1919. This is an estimated $184,227,400 increase.

Nobody knows, of course, what the final returns will be, but it looks as though the Canadian farmer, unlike his cousin across the line, has had an increased yield sufficient to take care of the decrease in the price of his crops.

WANT HIGHWAY CONSTRUCTION

A COMMITTEE of the City Council will wait on Hon. F. C. Biggs, Minister of Public Works, to make inquiries as to the cause of no highway construction work being provided for Waterloo county. The committee will strongly urge the construction of the highway from St. Jacob's to Galt, through Waterloo and Kitchener. A concrete roadbed has already been constructed from St. Jacob's to Elmira. The delegation will be composed of Aldermen J. Hessenaur, J. Lang, R. F. Gofton and W. Harttung.

A NEW PUMP FOR CANADIAN TRADE

WILLIAM BEARDMORE & Company, of Glasgow, Scotland, have recently opened a Canadian branch in Montreal, where they are showing a water pump that promises to be a great success among Canadian users.

The Beardmore centrifugal pump type C, as it is called, presents a neat and compact appearance that creates an impression of sturdiness and durability.

Breen Kennedy, who is representing William Beardmore & Company in Canada, explained to a representative of Motor Tractor and Implement Journal that the pump has been introduced to meet the demand for a simple, strong and reliable pump at a moderate price.

The general design was adopted after careful consideration of earlier models and of the conditions prevailing in countries where skilled labor is scarce. Special attention has been given to the interchangeability of parts, and everything is so carefully standardized that it is not possible to assemble the pump out of line. The passage of water through the pump has been exhaustively studied and the impeller and volute casing proportioned in accordance with the practical results secured. This assures easy flow of the water and eliminates any sudden changes of pressure that may make themselves apparent. Perhaps the crowning feature of this pump, the makers say, lies in the fact that it is directly connected.

AUSTIN CARS AND TRACTORS FOR CANADA

A NEW car for Canada is being introduced to this country in the "Austin Twenty," manufactured at Birmingham, England, and early in February an exhibit was held at the Windsor Hotel, Montreal, in charge of Major H. J. Cupper. This line is shown in touring, coupe and landaulet types. It is also the intention to place on the Canadian market a tractor, the price of which it is expected will run in the neighborhood of $2,000. Negotiations are now being carried on with the Dominion Customs authorities in regard to duties that will have to be paid. Speaking to Motor Tractor and Implement Journal Major Cupper said that the head office for Canada and a warehouse liberally stocked with parts would be opened in Montreal, and in a few weeks resident representatives would be appointed for Halifax, Quebec, St. John, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Calgary, Vancouver and Victoria. The company's works have been turning out cars at the rate of 10,000 a year, and tractors in similar quantities.

NOW IT'S MONTREAL MOTORISTS' LEAGUE

AT A recent meeting of the Montreal Automobile Association it was decided to change the name to that of the Montreal Motorists' League. The Board of Directors, under the leadership of President J. D. Chesney and Vice-president Malcolm Lemieux, are making efforts to increase the membership to 5,000 during the coming year. In the absence of T. C. Kirby, the secretary-treasurer of the association, the duties of the office will be looked after by Director J. K. Blyth.

ENTERTAINS STAFF

W. G. COLE, proprietor of the Advance Machine and Welding Company, of Montreal, entertained his entire staff to dinner at one of the leading restaurants and to specially reserved seats at the Princess Theatre recently. Mr. Cole believes in maintaining cordial relations between himself and staff and his latest move in showing his appreciation was certainly enjoyed. The Advance Machine and Welding Company specializes in cylinder grinding, welding and the manufacture of special piston rings and parts.

BLACK AND DECKER ANNOUNCE NEW CANADIAN OFFICE

THE Black and Decker Mfg. Co., of Touson Heights, Baltimore, have opened a new Canadian office at 392 St. James Street, Montreal, in charge of A. J. Hopkins.

Mr. Hopkins is well known to the automotive trade in Canada and is chairman of the Canadian Auxiliary of the Automotive Equipment Association.

Put Your Name On THIS PAY-ROLL

Men like you are wanted for big paying positions in the fascinating field of automobile engineering. We have made it easy for you to fit yourself for one of these positions. You don't have to go to school. You don't have to serve an apprenticeship. Fifteen automobile engineers and specialists have compiled a spare time reading course that will equip you to be an automobile expert without taking any time from your present work.

AUTO BOOKS
6 Volumes Shipped FREE!

Now ready for you—an up-to-the-minute 6-volume library on Automobile Engineering, covering the construction, care and repair of pleasure cars, motor-trucks and motor-cycles. Brimming over with advanced information on Lighting Systems, Garage Designs and Equipment, Welding and other Repair Methods. Contains everything that a mechanic or an engineer or a motor-cyclist or the owner or prospective owner of a motor car ought to know.

Partial List of Contents

More than 100 blue prints of wiring diagrams

Explosion Motors
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Motor Construction and Repair
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Valves, Cooling
Lubrication
Fly-Wheels
Clutch
Transmission
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Tires
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Starting and Lighting Systems
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Written in simple language that anybody can understand. Tastefully bound in American Morocco, flexible covers, gold stamped, 2,650 pages and 2,100 illustrations, tables and explanatory diagrams. A library that cost thousands of dollars to compile but that comes to you free for seven days' examination.

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Don't take our word for it. **See the books without cost.** There is so much profit in this offer for you that we urge you not to waste a moment in sending for the books. **Put the coupon in the mails to-day. Send no money, just the coupon.**

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Dept. A-1382 **CHICAGO, ILL.**

AMERICAN TECHNICAL SOCIETY,
Dept. A-1382, Chicago, Illinois.

Please send me the 6-volume set, Automobile Engineering, for seven days' examination, shipping charges collect. If I decide to buy, I will send you $2.80 within seven days and the balance at $3 a month until the $24.80 has been paid. Then you send me a receipt showing that the $45.00 set of books and the $12.00 Consulting Membership are mine and fully paid for. If I think I can get along without the books after the seven days' trial I will return them at your expense.

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Melotte

"Melotte"—A household word on Canadian farms for over a quarter of a century. Melotte Cream Separators have been a standard line for Canadian Implement Dealers for over 25 years, and are now more popular than ever. Why ruin your reputation as an honest dealer by handling poor, shoddy machines or cheap imitations? Stay with the "old reliable Melotte"—the Farmer's Favorite—easiest turned, easiest cleaned.

Other Lister Farm Machines are: Lister Engines, Lister Milkers, Lister Premier Cream Separators, Lister Silos and Silo Fillers, etc.

Write for literature and agency arrangements.

R. A. Lister & Co. (Canada) Limited

Toronto and Winnipeg

BEAVER VULCANIZER

A Complete Vulcanizing Machine Equipped to Handle 3 inch to 5½ inch Tires

The Complete Plant

Tried and Tested in Actual Work

A Proven Success

Complete with bench last and gas burner

$350

f.o.b. Toronto

Fitted with oil burner $25 extra

This is a complete, compact unit with three-cavity head for vulcanizing 3 in., 3½ in., 4 in., 4½ in., 5 in. and 5½ in. tires. It is also equipped with 24 in. x 4½ in. tube plate.

The boiler is 6-flue cavity type in a conical stand and is fitted with most approved equipment in the way of safety valve, boiler gauge, filler, air vents, steam gauge, etc.

The plant includes nine sets of aluminum bead plates—an exclusive feature—light to handle, extra strong and aluminum is the best possible metal to retain heat.

The unit is compact, occupies little space and handles all sizes of tires. Steam generated—can also be used for other purposes such as in retread moulds. Complete instructions are given with each machine.

The "Beaver" has been proved efficient in operation in a number of garages and repair shops. It is not an experiment, but an acknowledged success and what has long been needed by most garage and repair men.

Glad to give all needed information to those interested.

The Beaver Pattern & Mfg. Co.

337 King Street West, TORONTO

NEWS — OF THE TRADE FOR THE TRADE

ONTARIO

FORT FRANCES.—The Canadian Rotary Floor Garage Co. has been incorporated.

WHITBY.—The Central Motor Sales Agency have secured the Chevrolet agency for West Whitby.

GALT.—Elliott and Whitehall, manufacturers of small tools, expect to be in their new building by spring.

FORT WILLIAM.—The Westport Service Garage is being reopened under the management of E. King.

OTTAWA.—J. Loughlin, formerly I.H.C. branch manager at Ottawa, has been transferred in a similar capacity to Hamilton.

LONDON.—Hodgins and Ferguson, Limited, is a new concern incorporated to carry on a general automobile accessory business.

LINDSAY.—A building has been secured here by a manufacturing concern for the purpose of manufacturing automobile tops.

NEWMARKET.—Arthur A. Smith, who, for some years, conducted an automobile and accessory business, died here recently.

TORONTO.—T. A. Russell, general manager of Willys-Overland, has been appointed to the Board of Governors of St. Andrew's College.

HAMILTON.—L. P. Thayer, formerly I.H.C. branch manager at Hamilton, has been transferred to the Chicago office of that concern.

BRANTFORD.—At a recent meeting of the Cockshutt Plow Co., E. A. Mott, Western general manager of the company, was elected a director.

PORT ELGIN.—The garage formerly conducted by Messrs. Coulter and Powers has been purchased and is now being operated by George McIntee.

COLLINGWOOD. — Oliver Wyant has started an auto repair business and expects in the near future to extend his activities to tractors and tractor repairs.

TORONTO.—The Dominion Battery Co., formerly located at Dundas Street East, are now occupying a spacious building at the corner of Trinity and Front streets.

OSHAWA.—R. H. Mulch, formerly sales manager of the Chevrolet Motor Company of Canada, has been appointed to a position with General Motors in New York.

SUTTON.—R. A. Culverwell has sold his garage to Dr. Lavery and has gone into the electrical business. He has secured the agency for the Delco Light farm lighting plants.

LONDON. — Charles W. McGuire, manager of the London branch of the Imperial Oil Co., died recently at his home, 799 Hellmuth avenue, following several weeks' illness from heart trouble.

PORT ARTHUR.—A new garage has been opened here under the firm name of Blanchard and Campbell. The new partners carry a complete stock of accessories and handle all lines of repair work.

TORONTO.—H. E. Brasier has been appointed Ontario sales manager for Willys-Overland, Limited. He is succeeded as manager of the service department of the same concern by B. H. Capsey, who has had charge of the parts department under Mr. Brasier.

KITCHENER. — The third annual automobile show in Kitchener has been arranged to take place for the week of March 19-25 and will be held in the market building. The show will be managed by G. O. Philip.

QUEBEC

MONTREAL.—The West End Vulcanizing Company has been registered here.

MONTREAL.—The Gordon Auto Top Co. is the name of a new concern registered recently.

QUEBEC.—Messrs. Jarry Freres, of Montreal, have taken over the Ford agency for Quebec city and district.

SHERBROOKE.—Wiggett Electric Company, 82 Wellington street, formerly Electric Motor and Repair Company, will move into their new building at above address shortly and will do all kinds of motor repairing and selling of motors.

QUEBEC.—The Quebec Government has declared against the city of Montreal collecting taxes on automobiles. The Government sees no more reason for giving a share of the motor vehicle revenue to Montreal than to any other city of the province.

MARITIMES

HALIFAX, N.S.—A. Grey has secured the agency for Dodge cars for the County of Halifax.

NEW GLASGOW, N.S.—D. R. McKay has just moved into a new garage built on the site of his old one.

STELLARTON, N.S.—J. Hoar has secured the agency for Chevrolet cars for Pictou County. He handles repairs and a complete stock of accessories and repair parts.

ST. JOHN, N.B.—J. H. Hazlewood, who has been for some years a salesman for the Canadian Fairbanks-Morse Co. at St. John, has been transferred to the territory east of Halifax.

NEW COMPANY

THE Super Charge Engineering Co., of Canada, with head office at Montreal, has been incorporated with a capital of $2,000,000. The company has been incorporated to manufacture, purchase, lease or deal in motors, tools, engines, machines, electric and mechanical fixtures, etc.

ELECTED MAYOR

GEORGE WEDLAKE, general manager of the Cockshutt Plow Co., Brantford, Ontario, was elected mayor in the civic elections recently, having a majority and a plurality as well. The result was a remarkable tribute to the esteem in which Mr. Wedlake is held in the community. He has been on the Hydro Commission of that city for some years. Mr. Wedlake has been with the Cockshutt Plow Co. for many years, starting there as a molder, and working his way on up to the position of general manager. He has a plain and direct method of talking to men, and when he gives his word on a point it is accepted as as good as finished already. Mayor-elect Wedlake should be able to serve his city well.

WESTERN NOTES

ALBERTA

EDMONTON.—L. Kapperberg has taken over the Midway Garage.

VERMILION.—L. H. West has sold his implement business to W. E. McKenzie.

CALGARY.—F. E. Spooner, formerly branch manager at Lethbridge for the International Harvester Co., has been transferred in a similar capacity to Calgary.

LETHBRIDGE.—R. W. Greenway, who has been assistant manager at Estevan for some time, has been appointed manager of the same concern's branch at Lethbridge.

CALGARY.—Under the Motor Vehicles Act a by-law has been put into force for checking up the offenders under the act. Tags are being used by the police. They are placed on the car of an offender, who is required to appear at police headquarters and explain his misdemeanor.

BRITISH COLUMBIA

VANCOUVER. — Vancouver Tires, Ltd., 548 Georgia Street West, is a new tire repair business opened here.

KAMLOOPS.—P. Freeman, formerly associated with the Tire Service Shop in New Westminster, has recently opened a vulcanizing business here. He handles retreading, section work and tube repairs and carries a complete stock of tires, tubes and tire accessories.

NEW WESTMINSTER—The Columbian Garage, Albert Crescent, has been taken over by J. Coote. Mr. Coote will operate his garage on the departmental system. All the mechanical requirements to rebuild an old car into a new one will be arranged under one roof. A number of veterans, with expert knowledge of the automobile business, will be associated with Mr. Coote. A new showroom will also be erected.

MANITOBA

GIROUX.—An implement business has been opened here by P. R. Toews.

BRANDON.—Kerrs, Limited, is the name of a new automobile concern recently incorporated.

CRYSTAL CITY.—Colter's Garage proprietors have built a new repair shop. They handle all automobile and gas engine repairs.

WINNIPEG. — The Winnipeg assembling plant of the Ford Motor Company of Canada, which had been closed since November, reopened on January 12th.

HARTNEY. — P. Cowan, a local farmer, has invented a new type of tractor, which he claims is lighter, handier and works easier than other tractors on the market.

EMERSON.—Victor Parkes, garage owner, was killed here recently when the car he was driving overturned. When the accident occurred he was en route to tow in a disabled.

WINNIPEG.—The Western Canada Automotive Equipment Show, which is to be held in the Board of Trade Building, February 14-19, will be open to the public, free of charge. This was decided at a recent meeting of the executive committee.

WINNIPEG.—A new garage has been opened by the Griffith Motor Car Co. at 341-347 William avenue. It is modern in every respect and a day and night service will be provided.

BRANDON.—The Imperial Oil Co., Ltd., are planning to erect a two-story, fireproof office; a large two-story, fireproof garage, and a plant for the repair of barrels. It is expected construction will begin in the spring.

ST. BONIFACE.—The Rat Portage Lumber Company building, Norwood, is being remodelled into a modern plant for the making of automobile bodies. Building of car bodies will begin in April or May, according to an announcement by C. L. Lane, mechanical superintendent of the plant.

SASKATCHEWAN

SCEPTRE.—The North West Farmers and Threshers, Ltd., has been incorporated.

SHAUNAVON. — The Shaunavon Motor Co. is a new automobile business opened recently.

MILDEN.—Sinclair and Bratseth is the name of a new automobile concern opened here recently.

KINISTINO.—Coyer and Munroe have purchased the automobile business formerly conducted by E. M. Butts.

QU'APPELLE. — The Qu'Appelle Garage Co. is making a specialty of winter overhauling of cars and battery work.

REGINA.—The Western headquarters of the Cleveland Tractor Co., which formerly were located here, have been removed to Winnipeg.

DRUID.—A patent has been granted to H. M. Earle, A. Vangeois and F. Carston for a newly invented improvement which controls the lighting of an automobile.

REGINA.—Ryan Motors, Limited, have purchased the building formerly occupied by the Regina Trading Co. and will alter the store into a garage and show room at a cost of $40,000.

EYEBROW—H. H. Smith has erected a new garage, which he will occupy shortly. Equipment and machinery are being installed to take care of every phase of automotive repair work. The building is steam heated.

PRINCE ALBERT. — Under the auspices of the Prince Albert Agricultural society a practical course in tractor operation and gas engineering is being held from Feb. 1-12. Professors from the agricultural department of the Saskatchewan University are conducting the course. D. H. Woods' garage has been chosen and a fee of $6 is being asked for the course.

MANITOBA AUTO LICENSE RATES TO BE INCREASED

THE Manitoba Provincial Legislature has under consideration a policy to increase the automobile license rates by 50 per cent. The new license proposed is $15 annually for all makes of cars. The revenue obtained from the automobile license department for the fiscal year 1920 was $407,412. Annual statistics compiled by W. McKnight, of the automobile license department, show that there was an increase of 25 per cent. over 1919. This means that one resident out of every sixteen in Manitoba owns a car.

Keyes Supply Co.
LIMITED

The House of Quality

Headquarters for all types of equipment on Automobile, Truck or Tractor. Wholesale only.

No orders from other than legitimate dealers accepted.

282 Sparks St., Ottawa

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PERFEX

The Perfect Radiator

Perfex radiators for Fords are a quality product embodying features that cannot be had in other radiators.

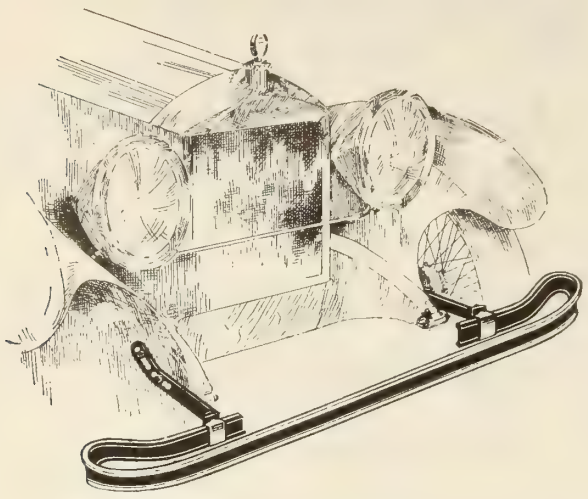
A patented spring bracket suspension and a real radiator core of great efficiency.

The last word in Radiator construction

Perfex Radiator Co., Racine, Wisconsin, U.S.A.

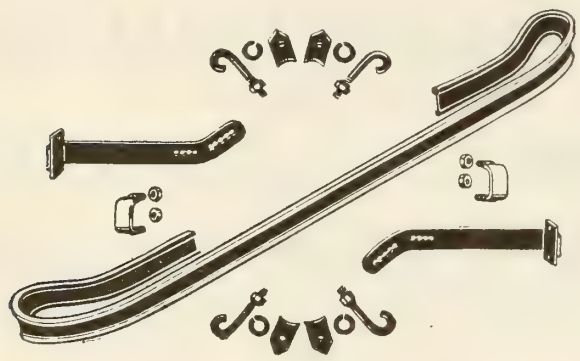
P. A. C. McINTYRE & COMPANY
311 Confederation Life Building, Winnipeg
Direct Representatives for
Manitoba, Saskatchewan, Alberta and British Columbia

"HERCULES"



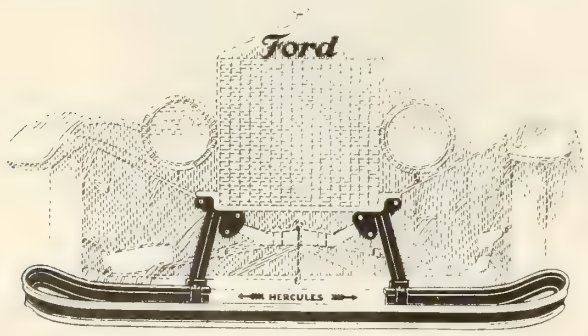
BEAUTY

Undoubtedly the best looking Bumper on the market.



STRENGTH

"Hercules" is easy to put on any car, either back or front—this illustration shows every part.



UTILITY

We have a mighty attractive proposition that is sure to get your interest from the start. Ask us to tell you about it.

See our exhibit at the Winnipeg Show, February 14 to 19.

HERCULES BUMPERS LIMITED

4 and 6 Spadina Avenue, Toronto

CHANGES IN WILLYS-OVERLAND

SEVERAL changes have taken place in the personnel of Willys-Overland, Limited. J. R. Marlow has been promoted from the position of Montreal branch manager to be secretary and treasurer of the company. As he will also have supervision of sales generally Mr. Marlow will take over many of the duties formerly performed by Mr. MacKay and Mr. Dover. His appointment follows Mr. Burt's transfer to one of Overland's allied industries, the New Process Gear Company, of

Mr. J. R. Marlow

Syracuse, N.Y. When T. A. Russell, president of Willys-Overland, announced the appointment of C. R. Burt as general manager it was part of the arrangement with Mr. Willys and Mr. Chrysler that Mr. Burt would return to the United States later in the present year. Owing to developments earlier than expected it was found advisable for Mr. Burt to assume the management of the Gear Company in January. Formerly sales manager of the Russell Motor Car Company in Toronto, Mr. Marlow went to Montreal in 1915 to take charge of the then Russell Motor Car Company branch. This branch was taken over as a branch of Willys-Overland in 1917 and Mr. Marlow continued as manager.

PREPARING THE AUTOMOBILE BODY FOR VARNISHING

ALL this looks so simple to the layman that he is sometimes caught speculating upon his ability to perform the work and thus become his own finisher, says the Vehicle Monthly. This washing and cleaning the surface for the varnish is like many other simple yet very difficult operations. The skilled finisher is alive to the importance of the work and understands how essential it is as a means of leading up to the finish in its correct estate.

Before the washing must come the rubbing of the varnish. We shall content ourselves at this time with a reference to the final rubbing work, which should be performed with direct reference to the washing to come after. This final rubbing should be simply in the nature of a water rub to clean the surface from traces of the pumice stone flour ground into the film during the surfacing operation.

Just take a clean piece of felt and dip it freely into the water, and then with water thrown freely over the surface proceed to rub the work until a firm, clean and hard surface entirely free from the whitish smear of the pumice stone flour is the result. This will help the final washing up amazingly, both in the matter of labor and in appearance.

In washing it is a standard of practice with good finishers to have two kits of washing tools and pails. One for the first washing and one for the second. Each pail, of galvanized iron, should contain a soft fleece wool sponge, a wash tool or brush, and a chamois skin or wash leather.

In washing the surface use plenty of clean, soft water. Flood the surface from the upper edge and let the sediment and roughage float off through the power of the volume of water employed. Tool around closely to all surface fixtures, along the upper and lower edge of the body surface; even get under the edge of the body and free all adhesive accumulations, after which flood these spaces out with a good flow of water.

Around all moldings take special care to have enough water and enough tooling with the brush to free the adhering foreign matter.

Water, let it be remembered, is the best possible medium for carrying off the surface excretions, and the substances which cling tenaciously to out-of-the-way spaces. It also hardens the surface and shapes it up for the varnish, and makes it more receptive thereto, and has much to do with giving the varnish brilliancy and fine looks.

In drying off with the wash leather use only sufficient pressure to take up the pools and big drops of water; the fine mist will evaporate quickly and leave the surface in better shape than if rubbed off by main strength.

THE PASSING OF THE CEDAR POST

SLOWLY, steadily, without noise or hurrah, yet nevertheless surely, is there proceeding a significant revolution throughout the farm lands of this Dominion. The cedar post, good and faithful servant, for long years guardian and bulwark of the line fence, is being relegated to the wood pile, whence it is removed—in sections—to end its career in a blaze of glory, heating the kitchen range.

One sees to-day, everywhere, long rows of trim, stalwart, efficient looking steel fence posts marching across the countryside. Each season finds new battalions added to this straight-backed army. The cedar post is vanishing from the land; soon it will be as rare and obsolete as the stump or rail fence. The cedar post has served its purpose, had its day, and must now give place to a newer, cheaper, more efficient instrument; even as the hand churn, the scythe and the wooden plough.

The steel fence post has so many obvious advantages—has proven its superiority in so many ways that the cedar post is no longer a competitor, merely a survival; and the reasons are not far to seek. The saving in labor is tremendous—whereas the digging of post holes was a mean chore at best, and in stony ground often the cause of young men leaving the old homestead for the bright lights of the city—a steel post is driven in quickly and securely with a mallet; there is no back-breaking digging and no monotonous filling in or tamping.

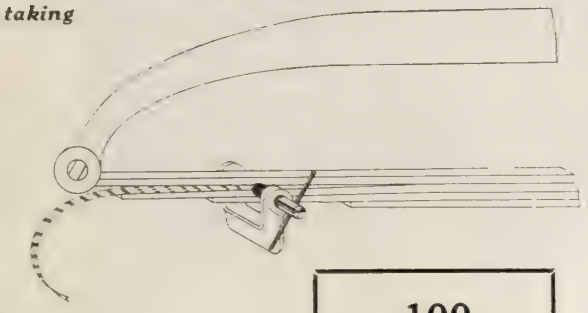
It is a lightning conductor. During thunder storms the electric fluid is taken into the ground, whereas with wooden posts it is flashed along the wires, killing any cattle which might be close to the fence. This factor of safety alone, which approximates an insurance policy on valuable stock has caused dairymen to scrap sound wooden posts and install those of steel.

It will last indefinitely. Treated with a rust-proof solution as is every good steel post, the weather makes no impression upon it. It cannot be eaten away by ants, grubs or other vermin which find in a wooden post many palate-tickling delicacies and much nourishment. It cannot be harmed by fire. This feature appeals strongly to all whose property may be threatened by prairie fires or forest fires.

The steel fence post is trim, economical, efficient, with a strength adequate for every demand. It is the instrument best suited to its purpose.

The cedar post is passing — has passed.

Applied without taking springs down



A Source of Profit you may have overlooked

100 Per Cent.

Sounds unreasonable, but that's what you make on your investment in E-Z-E. E-Z-E is a veritable gold mine to a live wire. Don't let another "beat you to it." Write to-day.

You know how necessary smooth-working resilient springs are to the economical operation of a car. You know, too, how few motorists really give attention to springs. 99 out of every 100 motorists who come to you can be shown in a minute or two the importance of keeping springs properly lubricated and efficient.

A few words from you will open the way to a sale of

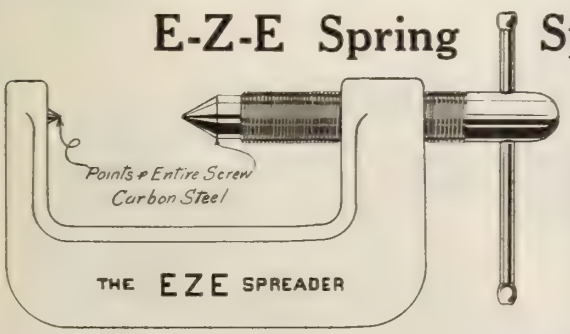
E-Z-E AUTO SPRING GREASING TAPE

This is something new—easy to apply without taking the springs down. Keeps springs resilient, prevents breakage, lengthens their term of usefulness, saves wear and tear on engine, saves gas, saves tires.

Every motorist you talk to will eventually buy E-Z-E. It has a sales-future greater than most conveniences and accessories you are selling to-day.

E-Z-E presents a rare opportunity for a live garage or accessory man in every district. Grasp this chance for profit; claim your territory now.

E-Z-E Spring Spreader



Don't waste time, patience and good screw-drivers getting leaves of springs apart. Use the E-Z-E Spreader. The simplest, strongest, fastest-selling spring spreader on the market. Look at these illustrations—they show how easy it is to use the E-Z-E Spreader. Order a couple for your own use as well as a few for re-selling.

G. TRUSSLER, Orillia, Ont.

KLEARSIGHT
TRADE MARK

Cleans brass and nickelled parts.

Prevents steaming and frosting of windshield.

The handiest cleaner you could offer motorists

Contains No Acid

Klearsight is the all-purpose cleaner for the motorist. All brass and nickelled parts cleaned perfectly without scratching, gives glass a new transparency.

Keeps the Windshield clear

Cleaned with Klearsight windshields will not gather moisture or frost. Klearsight leaves a transparent, waterproof coating wherever applied.

Easy to apply—a little on a damp cloth, rub off lightly, and polish.

Every motorist will want to try Klearsight, and everyone who once uses it will use it always.

We want a Klearsight agent in your locality. Write at once for reservation of territory.

PASZNICKI BROS., Limited
21 Richmond St. West **TORONTO**

Now as never before—

You Need Sound Financial Information

When so many investors, merchants, business executives, bankers, lawyers find in THE FINANCIAL POST the very facts which will help them in their investments, will **you** not find a weekly reading of its pages very beneficial?

THE FINANCIAL POST

143-153 University Ave., Toronto, Ont.

THE FINANCIAL POST,
143-153 University Ave., Toronto

.....192..

On the understanding that THE FINANCIAL POST contains just the facts I need for safe investment of profit, you may send me a recent issue.

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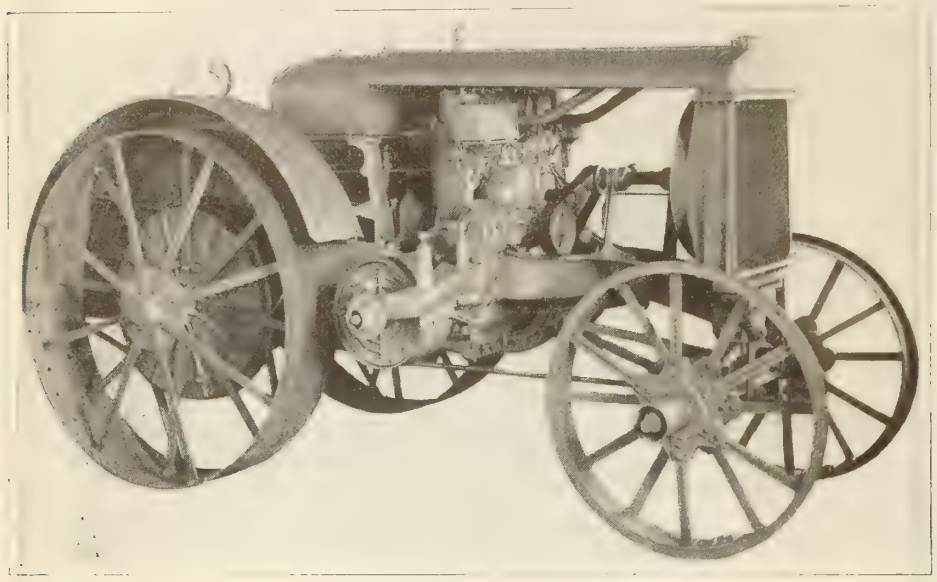
FORD TECHNICAL COLLEGE

HENRY FORD has announced his intention to open a technical college in Detroit. It will be known as the Ford Institute of Technology, and its curriculum will embrace those subjects which lead to degrees in mechanical, electrical and chemical engineering. Outstanding is Mr. Ford's decision to grant monetary scholarships to all students; freshmen will receive scholarships of approximately $20 a week. Rates for advanced students have not yet been announced.

Like all Ford ventures, the Ford Institute presents its own deviation from customary systems. The school year is divided into two parts, half of the time being spent in class, lecture rooms and laboratories, and half in the shops doing actual work under actual working conditions. This regimen is so divided that the students' work alternates every two weeks.

Although the Ford Technical Institute was announced but a short time ago, more than 1,000 applicants have already been received. Every state in the union has had its applicant; and many letters have come from Canada.



Minneapolis 12-25 H.P. Tractor

MINNEAPOLIS THRESHING MACHINE CO. ANNOUNCE NEW TRACTOR

THIS tractor is a development of the Minneapolis 12-25. It is rated 17-30 h.p. and weighs 6,000 pounds. The motor is a four-cylinder vertical, valve-in-head model, with 4¾-in. bore, 7-in. stroke. The cylinders are of the sleeve type, removable and interchangeable. The extreme length of tractor is 11 ft.; width, 6 ft. 2 in.; height, 5 ft. 10 in.; wheel base, 6 ft. 8 in.; drive wheels, 54 in. high, 12 in. face; fittings with 3 in. angle cleats; front wheels, 36 in. high, 5 in. face; low speed, 2 miles; high speed, 2.7 miles, with a normal motor speed of 775 r.p.m. The belt pulley is 15½ in. in diameter, 7⅞ in. face and mounted on the crank shaft. The rear axle and transmission gear shafts are mounted on Hyatt roller bearings and the outside belt pulley bearing is of the SKF double row, self-aligning ball bearing type.

The tractor is built almost entirely along the unit system of construction. The transmission case, the cylinder block and a forward casting being joined and bolted together, each unit having been completely assembled itself. A tie casting ties the front casting to the back or transmission case and forms a part of the spring draw bar. Every working part of the tractor is dust proof and all gears operate in oil. Even the steering gear worm is enclosed in the transmission gear case and is free from dust and in a bath of oil. The governor is of the fly ball type enclosed in a dust proof, oil proof housing, and the governor water pump magneto is assembled as a unit and driven from the gear shaft. The mechanical oil pump and splash system thoroughly lubricates all parts, the front axle is of the auto type clutch and the belt wheel is of the twin disc type and is operated in connection with a belt pulley brake. When the clutch is engaged the brake is released, while it is disengaged the clutch applies the brake to the belt pulley face. An emergency foot brake works on the reverse shaft, so it is always effective, it is claimed, even should the transmission gears be in neutral position. This tractor is equipped with Dixie magneto, Bennett oil cleaner, Kingston carburetor and special combination intake exhaust manifold with heat regulating valves. Water is used with kerosene and is supplied through a system water valve controlling the amount of water in proportion to the load and the amount of fuel being used. This control is automatic.

This tractor is a 3-4 plow outfit and has ample power on the belt, the makers say, to operate a 24 or 28 in. cylinder individual thresher with all attachments.

THE POWEROX INDUSTRIAL TRACTOR

THE Barrett-Cravens Company, of Chicago, are manufacturing an industrial tractor which they have named the Powerox.

The Powerox is designed and built for heavy duty in factory or inter-plant —for dock, freight terminal and warehouse, and for light to medium construction work where a very small unit is needed. As a carrier, the makers say, it will transport 3,000 pounds. As a tractor it will pull 40,000 pounds. It is compact—about 4 x 8 feet over all—and will travel in any ordinary aisle—can be run through the streets and into and out of buildings.

Although small in dimensions, it has full size truck units and is built up to 1½-ton truck specifications. The materials used in the construction of the Powerox, it is claimed, are the finest obtainable, and the best experience and brains in the industrial tractor field are back of it. It is also claimed the cost of operation and upkeep is surprisingly small.

The engine, clutch and transmission form a unit power plant, located in front. A Renault type hood is used, upon which is located a spring mounted driver's seat. This location gives the driver a clear view of the road, and utilizes waste space. The radiator is placed at the rear of the engine; is spring mounted and enclosed in a heavy steel plate housing. Its location, it is claimed, protects it from any possibility of damage in collision and minimizes effects of frame distortion.

Power is applied to the rear wheels through a worm-gear drive rear axle of the fully enclosed type. The housing is constructed of a heavy one-piece electric steel casting. The drive is transmitted from the rear axle through the rear springs, giving a flexible cushioned action when starting heavy loads.

The springs are semi-elliptic and are flat under load. Power is transmitted from the engine through a straight line drive universal shaft direct to rear axle. The Elliot type front axle is of heavy "I" beam section. Front wheel steer, of the conventional truck type arrangement, is used.

The steering gear is located forward of the front axle, the steering column raking back at a convenient angle for the driver. The straight, all-steel frame is of extra strong construction. A short wheel base permits of a very short turning radius. Foot pedals and hand controls are conveniently located. The gasoline supply tank is mounted behind the rear of the front bumper. Provision has been made for easy and ample lubrication of all working parts.

The engine is 25 h.p., 4 cylinder, 4 cycle, size 3¼ x 4½, "L" head type cylinders cast en-bloc. The valves are enclosed.

The general dimensions are as follows:

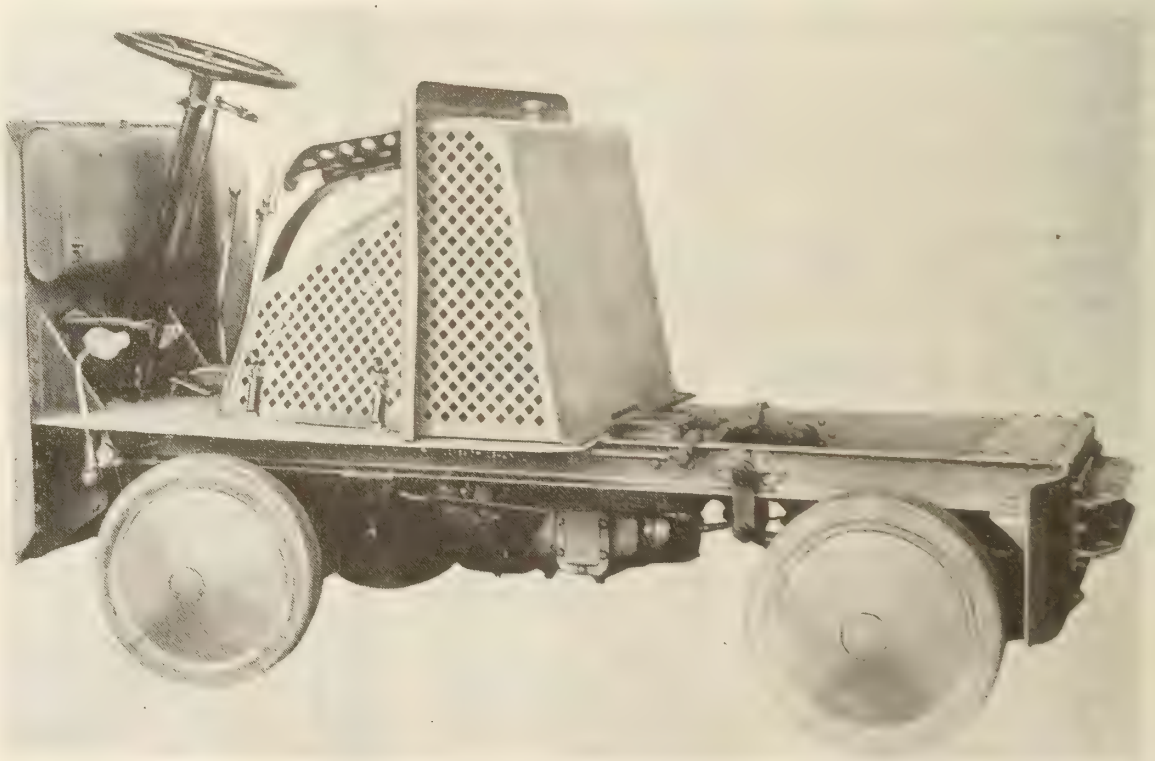
Wheel base, inches	[illegible]
Length over all, inches	[illegible]
Tread, inches	[illegible]
Width over all, inches	46
Turning radius, feet	[illegible]
Shipping weight, pounds	[illegible]
Radiator to rear, inches	[illegible]

INTERESTING TRACTOR DEMONSTRATION

AN interesting demonstration of a forest tractor, manufactured by the Renault Company of France, was given by H. Thiebaut, the Canadian agent in Montreal, before a number of engineers and interested parties recently. The tractor is a modification of the war tank and is especially adapted to work in field and farm, forestry work and mountain transport, etc. A similar demonstration will be held before representatives of the Montreal Harbor Commissioners.

TRACTORS DEMONSTRATE THEY CAN REMOVE SNOW

A DEMONSTRATION of specially designed tractors for the removal of snow from the city streets was given before the city commissioners of Montreal recently. The exhibition was given on the Champ de Mars, the three manufacturers demonstrating their machines being the J. T. Tractor Company, of Cleveland, Ohio; the Cleveland Tractor Company, of Montreal; and the Holt Manufacturing Co., of Peoria, Ill. The operation of the machines is on the same principle as the steam shovel, the work being accomplished by the caterpillar spikes breaking up the snow, and the weight of the tractor pushing it aside, the snow being then lifted and placed in cars or carts. One of the machines was so small that it could be worked to advantage on the ordinary sidewalk.



Powerox Industrial Tractor

Hull, Que.,
Jan. 19th, 1921.

To the Motor Trade:-

We wish to announce that owing to the increased demand for Veteran Trucks we are now in production on lines from 1½-ton capacity and up.

The parts and workmanship in all Veterans are of the same high quality as used in our well-known present models.

We have a good dealer's proposition and some territory still available.

EASTERN CANADA MOTOR TRUCK CO., LTD.

So long as the frame is intact

"Everything above the chassis"

This is no idle boast that we can take care of "everything above the chassis." So long as there is a frame to work on we can build, remodel, or repair the top of any type, style or make of car. We can make any alteration desired—take a roadster and make it a touring, transform an open car into a closed one. We take special pride in our work on closed cars, car doors and upholstery.

All work on bodies is in charge of two experts trained by Parkers, the famous English coach builders. The quality of their work is unsurpassed anywhere.

We have an interesting proposition to make to one reliable dealer in each locality. We want a representative whose customers want coach builder's work rather than wagon maker's.

Write for this proposition.

Auto Top and Equipment Co., Limited

270 Dundas St. West

TORONTO

$2.00 per pair
3 colors
All sizes

$2.00 per pair
3 colors
All sizes

New Stopglare Lens

WHY PAY MORE, when $2.00 will purchase a Legal Lens, which does not cut down your range of driving light?

This lens is the prettiest lens on the market to-day and offers the best proposition to the Dealer. New Stopglare Lens are given the maximum rating in the recent Government test.

By popularity of price
By meeting the Law
By beautiful features

NEW **Stopglare** *LENS*
are leaders in their class

Sole Manufacturers

Ontario Plate Glass Limited

Hamilton, Ontario

$2.00 per pair
3 colors
All sizes

$2.00 per pair
3 colors
All sizes

CANADIAN Motor, Tractor and Implement Trade Journal BUYERS' DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

AUTO ACCESSORIES
Advance Machine & Welding Co., Montreal.
Auto Top & Equipment Co., 270 Dundas St. W., Toronto.
Beaver Pattern Mfg. Co., 337 King St. W., Toronto.
Burd High Compression Ring Co.
G. H. Broughton, Toronto.
Canadian Fairbanks-Morse Co., Ltd., Toronto.
Cozens & Maynard, 4-6 Wood St., Toronto.
Hercules Bumpers, Ltd., 4 Spadina Ave., Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
Ontario Plate Glass Co., Hamilton.
Canadian Linderman Co., Woodstock, Ont.
Guelph Spring & Axle Co., Guelph.
The Canadian Raybestos Co., Peterborough, Ont.
G. Trussler, Orillia, Ont.
White & Thomas, Toronto, Ont.
Lamontagne, Ltd., Montreal.
Pasznicki Bros., 21 Richmond St. W., Toronto.
Perfex Radiator Co., Racine, Wis.

AUTOMOBILE LENS
Keyes Supply Co., Ltd., Ottawa, Ont.
Ontario Plate Glass Co., Hamilton.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE BOOKS
American Technical Society, Chicago.

AUTOMOBILE TIRES
Ames, Holden, MacCready, Montreal.

BARN EQUIPMENT
Beatty Bros., Fergus, Ont.

BEAN MACHINERY
John Deere Mfg. Co., Welland, Ont

BEET MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

BEARINGS

BINDERS
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING
The Canadian Raybestos Co., Peterborough, Ont.

BATTERIES

CARRIAGES

CREAM SEPARATORS
De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS
Joliette Castings & Forgings Ltd., Montreal and Joliette, Que.

CORN HARVESTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CORN MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

CULTIVATORS
John Deere Mfg. Co., Welland, Ont.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CUTTERS
Butterfield & Co., Inc., Rock Island, Q.

DAIRY SUPPLIES
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
DeLaval Dairy Supply Co., Peterboro.

DIES
Butterfield & Co., Inc., Rock Island, Q.

DISCS

DITCHING MACHINES

DRILLS, TWIST
Butterfield & Co., Inc., Rock Island, Q.

DRILLS, GRAIN
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

ELECTRICAL EQUIPMENT

ENGINES
Gilson Mfg. Co., Ltd., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

ENSILAGE CUTTERS
Gilson Mfg. Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

FEEDERS
John Deere Mfg. Co., Welland, Ont.

FARM MACHINERY
Beatty Bros., Fergus, Ont.
John Deere Mfg. Co., Welland, Ont.
Gilson Engine Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Link Mfg. Co., Portage La Prairie, Man.
R. A. Lister Co. (Canada), Ltd., Toronto
Warwick Machine Co., Ltd., Warwick, Que.

FEED CUTTERS
Gilson Engine Co., Guelph, Ont.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

GRINDERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
S. Vessot & Co., Joliette, P.Q.
Gilson Engine Co., Guelph, Ont.

HARROWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

HAY LOADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

HAY RAKES
John Deere Mfg. Co., Welland, Ont.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.

HAY CARRIERS

HAY PRESSES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HULLERS (Clover)

LENS
Canadian Linderman Co., Woodstock, Ont.
Keyes Supply Co., Ltd., Ottawa, Ont.
Ontario Plate Glass Co., Hamilton.

LIGHTNING SYSTEMS
Canadian Linderman Co., Woodstock, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
Gilson Engine Co., Guelph, Ont.

LIME AND FERTILIZER SOWERS
John Deere Mfg. Co., Welland, Ont.

LUBRICANTS
Spedolene Refining & Mfg. Co., Montreal.

MACHINE TOOLS

MANURE CARRIERS
Beatty Bros., Fergus, Ont.

MANURE SPREADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
Gilson Engine Co., Guelph, Ont.

MARINE FITTINGS

MOWERS
Cockshutt Plow Co., Brantford, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MILKING MACHINES
R. A. Lister Co. (Canada), Ltd., Toronto

MILLING CUTTERS
Butterfield & Co., Inc., Rock Island, Q

OILS

PISTON RINGS
Advance Machine & Welding Co., Montreal.
Lamontagne Ltd., Montreal, Que.

PLOWS
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER AND LIGHT EQUIPMENT
R. A. Lister Co. of Canada, Ltd., Toronto.
Canadian Linderman Co., Woodstock, Ont.

POWER MACHINERY
Canadian Linderman Co., Woodstock, Ont.
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Gilson Engine Co., Guelph, Ont.

POWER SWITCHBOARDS

POTATO MACHINERY
John Deere Mfg. Co., Welland, Ont.

PULVERIZERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

PULPERS

RAKES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAPERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAMERS
Butterfield & Co., Inc., Rock Island, Q.

ROLLERS

ROLLER BEARINGS

SAW MILL OUTFITS
Warwick Machine Co., Ltd., Warwick, Que.

SCUFFLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

SEEDERS

SCALES

SCREW PLATES
Butterfield & Co., Inc., Rock Island, Q.

STABLE EQUIPMENT
Beatty Bros., Fergus, Ont.

SILOS
Gilson Mfg. Co., Guelph, Ont.

SLEIGHS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SILO FILLERS
Gilson Mfg. Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SOCKET WRENCHES

SEPARATORS (CREAM)
De Laval Co., Ltd., Peterborough, Ont.
R. A. Lister Co. (of Canada), Ltd., Toronto, Ont.

SPREADERS, MANURE
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can. Ltd., Hamilton, Ont.
Gilson Mfg. Co., Guelph, Ont.

SPARK PLUGS

SPRINGS
Cozens & Maynard, Toronto.
Guelph Spring & Axle Co., Guelph

STARTERS
Imperial Agencies, 81 Victoria St., Toronto.

STAMPINGS

TELEPHONE APPARATUS

TRACTORS
Advance Rumley Co., Toronto, Winnipeg, Regina.
Cleveland Tractor Co., Ltd., Montreal.
Gilson Mfg. Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
J. I. Case Threshing Machine Co., Inc., Racine, Wis.

TRACTOR PLOWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

TOOLS

THRESHERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
J. I. Case Threshing Machine Co., Inc., Racine, Wis.
R. A. Lister Co. (Canada), Ltd., Toronto
Gilson Mfg. Co., Guelph, Ont.

THREAD CUTTING TAPS
Butterfield & Co., Inc., Rock Island, Q.

TIRES
Ames, Holden, MacCready, Montreal.

TWIST DRILLS
Butterfield & Co., Inc., Rock Island, Q.

TRUCKS
Eastern Canada Motor Truck Co., Ltd., Hull, P.Q.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

VULCANIZING
Beaver Pattern Mfg. Co., Toronto.

WAGONS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

WATER BOWLS
Beatty Bros., Fergus, Ont.

WEEDERS

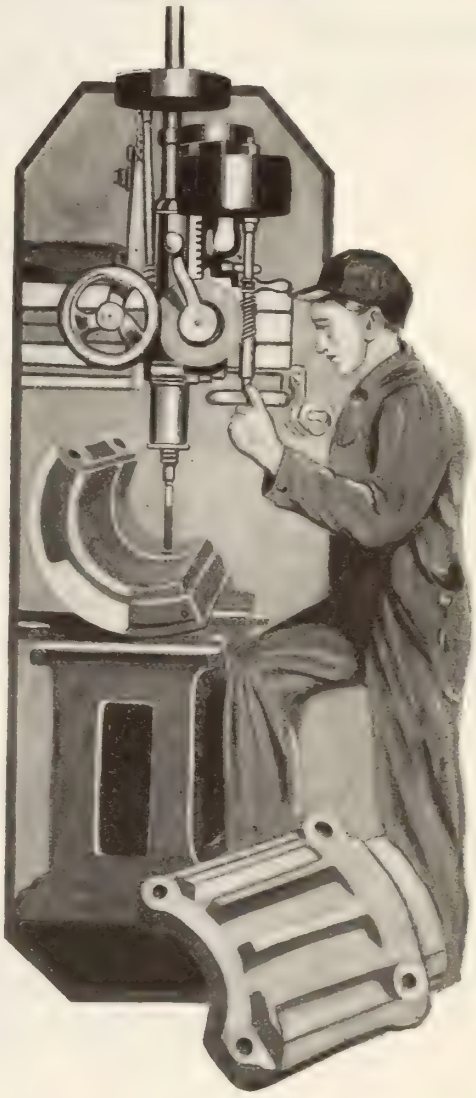
WIRES AND CABLES

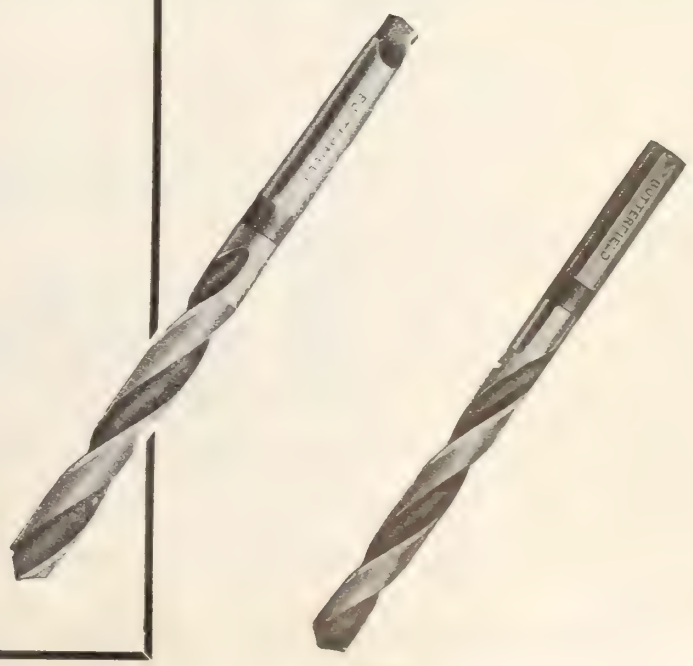
BUTTERFIELD Quality

WHEN business is "easy"—lots of work every day, and plenty of money coming in—one is not so keen to notice little differences in the quality of tools being used, though quality is really as important then as at any other time.

But when business is slow, hard to get, and none too profitable—that's different! Costs must be watched more closely, tools must last longer, must retain accuracy longer, must do cleaner, better work.

When costs must be cut "to the bone," Butterfield Tools are much in demand. Butterfield Quality reduces tool overhead, produces better jobs—actually helps business when it needs help most.





"The Tools You Buy Again"

Butterfield & Company, *Division*
Union Twist Drill Co.
ROCK ISLAND, QUEBEC
Toronto Office: 220 King Street West
Montreal Office: 131 St. Paul St. West

Just as effective now as in Summer

"SPEDOLENE"
—The all-year lubricant

"Spedolene" actually cushions gears, forms a buffer that prevents wear and tear. And it's so compounded as to be as effective in Winter as in Summer.
"Spedolene" will not corrode gears or bearings. It is unaffected by climatic conditions. It lubricates any time and all the time.
ASBESTOS will not allow heat to be transmitted. Consequently, in the lubricant form in which it appears in

SPEDOLENE

it creates between all working parts a cushion-layer of film that preserves alike the original qualities of the lubricant and the metal surfaces it covers.
We are making a nice proposition to Dealers. Enquire about it.

SPEDOLENE REFINING & MANUFACTURING CO.
LIMITED
MONTREAL

It Docks at Your Desk

Our service brings to your desk news items collected from the newspapers relating to your line of business.

Often you plan your affairs on market conditions or new developments, but you could plan much better with all information before you from the whole of Canada.

These newspaper clippings have proved most valuable to business houses, saving time in searching files and often being turned to good account, getting contracts and orders. We cover all parts of Canada and United States and read for all subjects discussed in the press.

Have the news packets arrive regularly at your desk with a cargo of timely news.

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Press Clipping Service
143-153 UNIVERSITY AVE., TORONTO

Dairy *and* Household Supplies

THE HAAG CABINET ELECTRIC WASHER

HAAG BROS. COMPANY, Peoria, Ill., manufacturers of washing machines, have evolved something new for the 1921 trade in the form of a cabinet electric washer which has more the appearance of a phonograph than a washing machine, yet is so substantially built, it is claimed, that the hard usage to which a washing machine is subjected has no effect on its practical service.

The machine is equipped with a ¼ h.p. motor, 1,750 r.p.m., splash proof type, built larger than necessary to accommodate overloads. Press a button on the washer either to start or stop the motor. A handy lever throws the cylinder either in or out of gear. It is equipped with a V belt drive, preventing damage or burning out of motor. The belt never needs shortening, for the tension pulls against two heavy coil springs that keep the belt tight. The motor is thoroughly insulated to protect the frame. All gears run in a bath of oil that needs renewing only once in three or four years. Needs oiling only occasionally, through accessible grease cups.

WATER SYSTEMS

ONE of the greatest sources of satisfaction around the farm home is a plenteous supply of clear, cool water. Good water is essential to the health and well-being of the entire household. There must always be a liberal supply for use at both house and barn. But when it becomes necessary, during the busy season, in all sorts of weather, and under other trying conditions, to pump and carry water by hand, then it is that the average farmer begins to realize that a great measure of relief would result from the installation of a dependable automatic pressure system.

The wide-awake dealer who sells to the farmer can perform a great service in his farming community and reap much profit by selling up-to-date water systems. The need for such systems is very great and the fact that farmers are interested in and anxious for them is becoming increasingly evident.

This is a good time to start a selling campaign. When the snow disappears and the frost goes out of the ground seems the most suitable time to instal water systems. The farmer is not too busy just now and will be more inclined to listen to a dealer's arguments than later on, when the spring work begins.

Then, again, the farmer should have his system installed before the dusty days of summer come. During the busy summer months, when the dust is at its worst, the need for a ready supply of water and a modern bathroom, with all its comforts, is strongly felt. The demands on the laundry supplies are greatest too during the summer months.

Altogether the dealer who goes after this business now with his talking points focussed correctly should have no difficulty in placing numbers of water systems before the summer comes.

TO MANUFACTURE GERM-KILLER STERILIZER

ANNOUNCEMENT comes from Bloomfield, New Jersey, that George F. Worthington, associated for the past seventeen years with the Empire Cream Separator Company, and the treasurer of that organization for the past seven years, has organized the Monarch Laboratories, Inc., with general offices at Bloomfield, N.J. Mr. Worthington's new company will manufacture and distribute a product to be known as Monarch Germ-killer Sterilizer.

The Monarch Germ-killer Sterilizer is made especially for dairy use. The product has been under test for a considerable period of time and has proven eminently successful as a sterilizer of dairy farm and creamery equipment.

NEW PERFECTION BRANCH

THE Perfection Mfg. Co., manufacturers of the Perfection milking machine, have recently opened a branch at Syracuse, N.Y. Rapid growth of this company's business in the East has necessitated an eastern branch to co-operate more closely with its eastern dealers. H. O. Moem has been made manager of the new branch. He has been with the Perfection Mfg. Co. for the past six years and is widely known throughout the dairy equipment and implement trade.

HOLT FARM LIGHT CO. ORGANIZED

THE Holt Farm Light Co., of Toledo, has been chartered with a capital of $1,000,000 for the purpose of manufacturing a farm lighting plant. The new company has taken over the plant and assets of the Automatic Light Co., of Ludington, Mich., manufacturers of the Holt 110 volt direct current, without storage battery farm lighting system. The plant at Ludington will be continued for such a time as a site is secured in Toledo and a new plant constructed. Arrangements have been made in Toledo for a warehouse and storage depot of 50,000 square feet of floor space for assembling purposes. The parts will be manufactured in Ludington.

NEW MILKING MACHINE PROJECT

THE Macartney-Soames Milking Machine Company, of Bloomfield, N.J., has been incorporated with a capital of $300,000 for the purpose of manufacturing the New Macartney milker. This milking machine is the invention of A. C. Macartney, who has been responsible, directly or indirectly, for a number of successful machines now on the market.

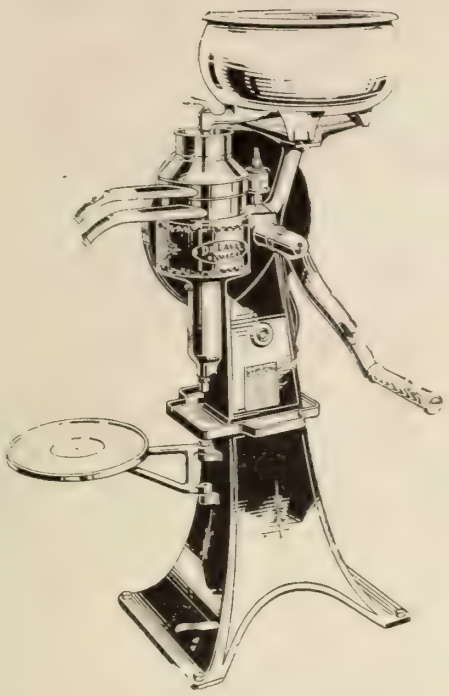
The following officers have been elected: L. N. Soames, president and general manager; A. C. Macartney, vice-president in charge of development and production work; J. J. Clark, treasurer, and A. P. Jennings, secretary.

Mr. Soames was for years associated with the Sharples Separator Company in various capacities and the Empire Cream Separator Company and is also a practical farmer.

A. C. Macartney has spent years in developing and designing milking machines and is responsible in part for five prominent lines being sold in the United States and Canada.

A. P. Jennings, the secretary, is well known in the milker trade. He was assistant advertising manager of the Sharples Separator Company for years and recently held a position of advertising manager of the Empire Cream Separator Company. He has a wide acquaintance among dealers and farmers throughout the United States and Canada.

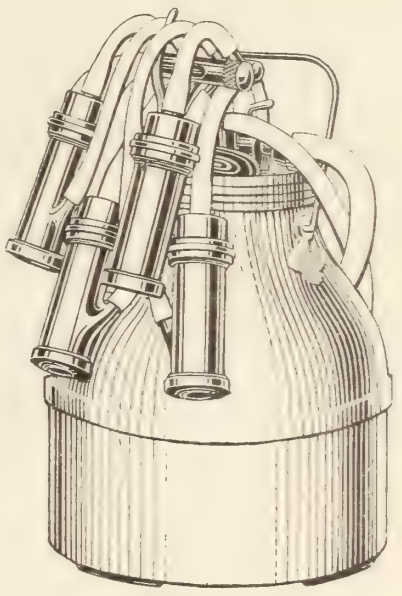
J. J. Clark, the treasurer, for years was factory works manager of the Empire Cream Separator Company and is well fitted for his position.



De Laval is the World's Standard Cream Separator

Over 50,000 leading dealers sell De Laval Cream Separators and De Laval Milkers. More than 2,500,000 farmers have bought them—and the number is growing every day.

There is no better time than right now to send in your application for the De Laval Cream Separator or Milker Agency. There is separator and milker business all around you. You can get more of it and make more profit with the De Laval than with any other machine.



THE DE LAVAL COMPANY, Ltd.
MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

Sooner or later you will sell the

De Laval

Cream Separator or Milker

RUGGLES TRUCKS

RUGGLES are builders of trucks for every purpose

RUGGLES are without a peer as truck-builders

RUGGLES organization has built more trucks than any other individual or corporation in the world

RUGGLES has always built better trucks than any other individual or corporation in the world

RUGGLES has always built trucks exclusively

RUGGLES as a Canadian enterprise has years of experience and success behind it

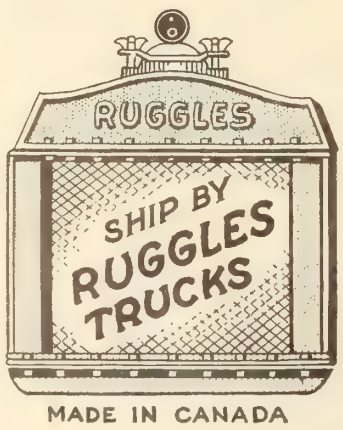
RUGGLES engineers and designers build into Ruggles Trucks the sturdy quality necessary to meet the exacting requirements of Canadian roads and climate

RUGGLES parts—every unit in every truck—have been tried and proven in service by thousands of users all over the world and found to be the best, therefore—

RUGGLES TRUCKS from radiator to tail light: will do credit in service to the makers and to Canadian industry

Use **RUGGLES TRUCKS**

Address Correspondence to Department 6



DEALERS

The Complete Line of

RUGGLES TRUCKS

will render dealers independent of any other truck affiliation. With the all-purpose range of models we make, Ruggles dealers will be able to sell successfully against any combination of trucks built.

1 ton Ruggles Rapid Delivery, complete with canopy top body, pneumatic tires only - -	$2,300
1½ ton Ruggles Chassis and Seat, solid tires - -	2,845
2½ ton Ruggles Chassis and Seat, solid tires - -	3,695
3½ ton Ruggles Chassis and Seat, solid tires - -	4,875

Vestibule or open cabs, stake, express or dump bodies. Pneumatic tires on request, extra, all bodies.

Ruggles Motor Truck Company, Limited

Dept. 6 LONDON - - CANADA

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

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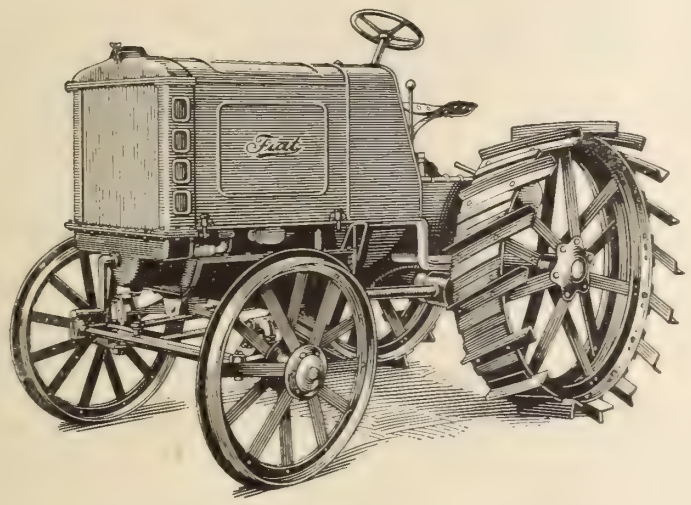
VOL. III, No. 3 TORONTO, MARCH, 1921 Subscription Price $2.00 Per Year

FIAT TRACTOR



Opportunity for Dealers. This is a Good One

The best dealers in Canada are looking for the Best Tractor Agency. The biggest "rake off" is not always the best proposition. In our humble opinion, the best is the one which will give your customers the completest satisfaction, the best work, with the least trouble and least expense.

Any dealer who is interested in this line enough to want the most convincing evidence and proofs of trials of the FIAT in competition with almost every well-known Tractor can have same on application.

LIVE DEALERS WANTED

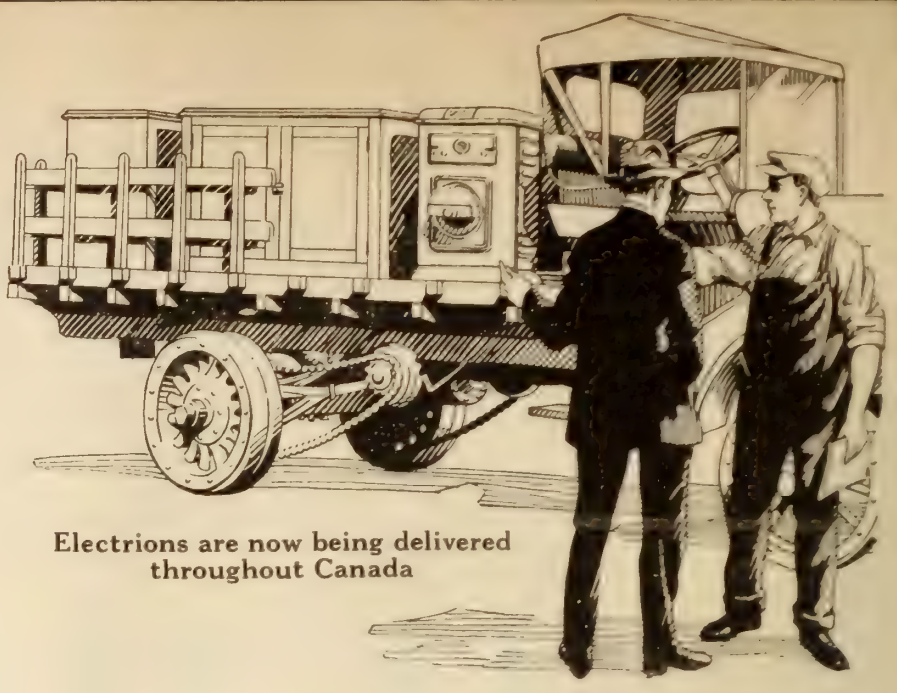
Our Terms are liberal and a good agent will find our line very profitable to handle. We urge promptness in applying for agency.

M. A. KENNEDY, LIMITED, TORONTO.

Fiat Distributor for Canada

106-110 Richmond St. West

Each "Electrion" Sold Helps You Sell More



Electrions are now being delivered throughout Canada

Every "Electrion" power and light plant that is sold is the best possible salesman to bring in new customers. Each purchaser of an Electrion takes pride in showing his machine to neighbors, in explaining its efficient, dependable service and in telling what a big comfort and labor-saver it has proved to him.

The exclusive features of appearance and design make the Electrion a rapid seller. It is different. There are points of excellence in the mechanism—(the electric governor, the removable control box, automatic water cut-out, etc.), that are embodied in no other electric plant. The cabinet idea, too, is an advantage that has an instant appeal to the eye and the utility of the containers is realized on a moment's thought. These are selling points that carry weight and they are exclusive to the Electrion.

The Market is Unlimited

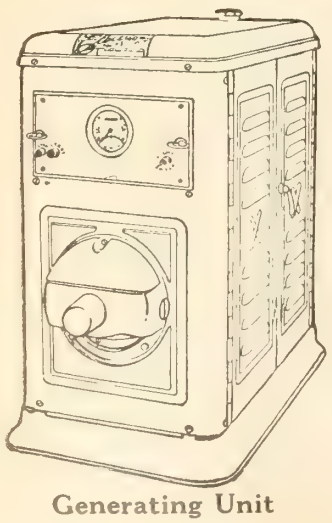
Consider the market. The Electrion is the logical answer to the demand for electricity in the farm—in country churches and halls—in summer homes—on yachts—in fact any place where central power is not available. The number of prospects is unlimited.

An Opportunity for Responsible Agents

We are offering agencies for the Electrion all over Canada. It is a first-class product and the selling rights will prove a tremendous asset to any business man who is equipped to handle the proposition. Great care is being taken in appointing our agents that men of calibre—men who are aggressive—who deal in superior products—are chosen. Write us direct for further information regarding the Electrion and full particulars of our proposition.

Electrion POWER & LIGHT

Plants



Generating Unit

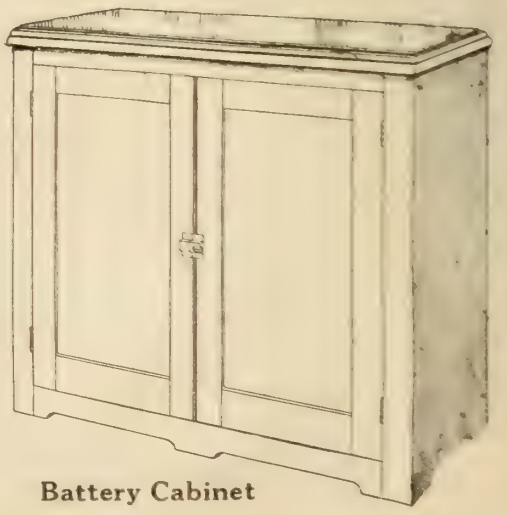
Not an expense but an investment

Canadian Linderman Co., Limited

Dept. A.

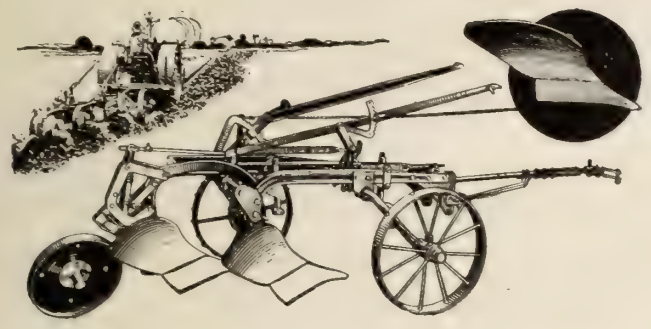
Woodstock - Ontario

Manufacturers for the British Empire



Battery Cabinet

A Tractor—Tractor-Plow Combination Built for Ontario Farms



"Waterloo Boy" Tractors and John Deere Tractor-Plows are a combination that appeals to Ontario Farmers.

Consider these advantages and you will understand why Implement Dealers in Ontario are reporting ready sales.

"Waterloo Boy" Tractors develop 12 horsepower on the draw-bar and 25 horsepower on the belt—This size is best suited for Ontario farms. "Waterloo Boy" Tractors use inexpensive kerosene. Their upkeep cost is low. All parts are accessible and easy to care for. "Waterloo Boy" Tractors have the proper design and good workmanship which give the ability to stand heavy work.

John Deere Tractor Plows will do work on a big scale and stand heavy strain. 80 years' leadership in plow making is back of them. They are easily operated and make a clean-cut furrow, which means better seed beds and good crops.

Every other implement in the John Deere line has the same distinctive advantages. The sale of a John Deere Implement means a satisfied customer. That is why John Deere dealers have a high reputation with the farmer. If you are interested in our dealer's proposition write for full details.

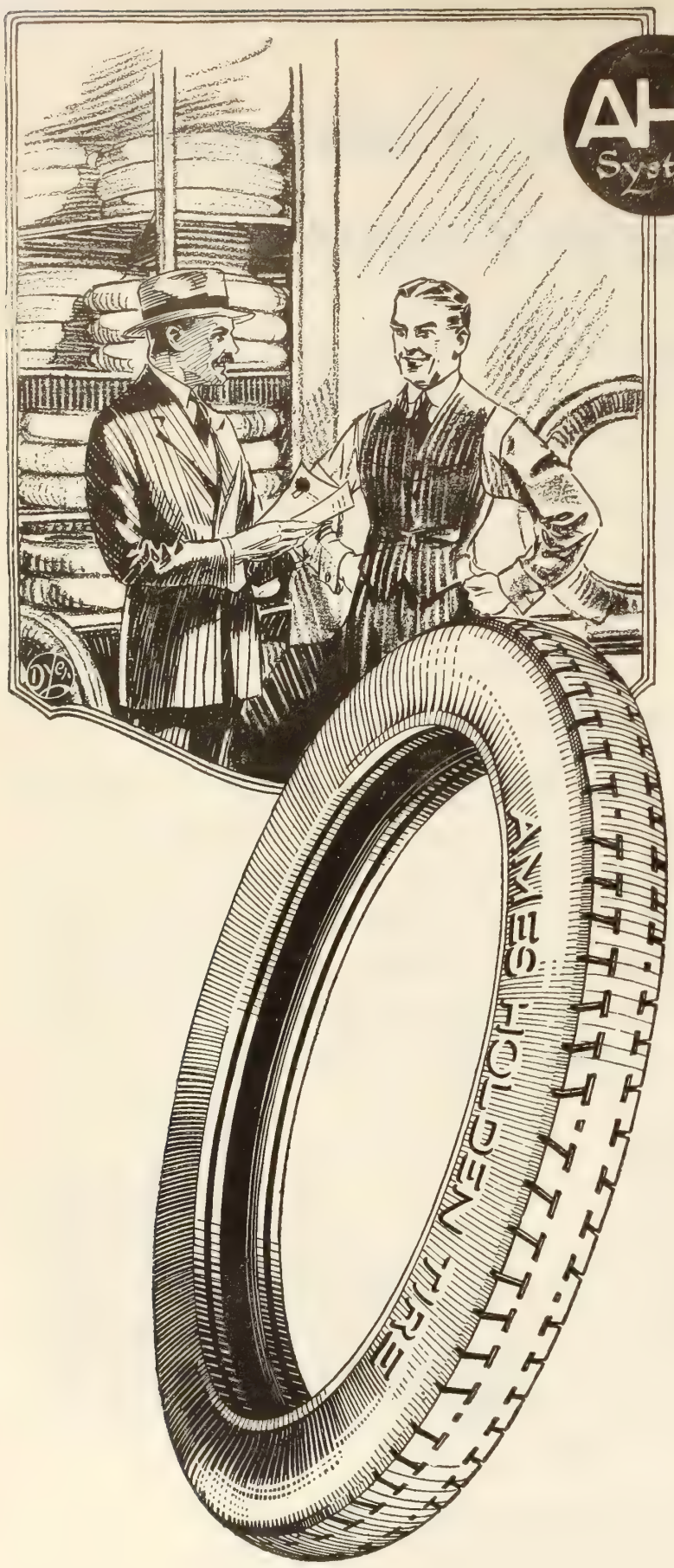
"Quality Line of Farm Implements"

John Deere Low-Down Manure Spreader; John Deere-Dain Left-hand Side Delivery Rakes; John Deere-Dain Rake-bar Hay-Loader; John Deere-Dain Sulky-Rake; John Deere-Dain Vertical-Lift Mowers; John Deere-Van-Brunt Plain Grain Drills; John Deere-Van-Brunt Fertilizer Drills; John Deere-Van-Brunt One-Horse Drills; John Deere-Van-Brunt Lime and Fertilizer Sowers; John Deere No. 999 Corn Planters; John Deere Cultivators; John Deere Scufflers; John Deere Smoothing Harrows; John Deere Spring-Tooth Harrows; John Deere Disc Harrows (Horse or Tractor); John Deere Field Cultivators; John Deere Beet Tools (Planters, Cultivators, Pullers); Hoover Potato Machinery (Planters, Sorters, Cutters, Diggers); "Reliance" Potato and Field Sprayers; "Waterloo Boy" Kerosene Engines; John Deere Walking Plows; John Deere One-Way Plows; New Deere Sulkies and Gangs; John Deere Contractors' Plows; John Deere Tractor Plows.

John Deere No. 40 Tractor Plow, specially designed for Fordson Tractor, is endorsed by the Ford Motor Car Company of Canada.

The John Deere Manufacturing Co., Limited

Welland **Ontario**



AMES HOLDEN
Grey and Red Tubes
add to the mileage given by "Auto Shoes"

AHM System

Will They Beat A Pathway?

Some business experts say that the old maxim, "Make good things, and customers will beat a pathway to your door," does not hold good to-day.

Maybe it doesn't. But then consider these facts:

Ames Holden "Auto Shoes" are comparatively new. They haven't been extensively advertised. They have had to elbow a way through hosts of competitors.

However, when the first sales were made the result was like starting snowballs downhill—they gathered in new sales as they went. Men who find a good thing simply can't help talking about it.

Now clean advertising and wide distribution are lending impetus to the sales growth of Ames Holden "Auto Shoes"—adding force to the great influence of enthusiastic users, talking "Auto Shoe" performance wherever mileage is the topic.

And sales results to date show that "customers are beating a pathway" to the doors of our dealers—from one end of Canada to the other.

Apart from the matter of sales, our dealer policy considers you very largely. Let us tell you about it. Write.

AMES HOLDEN "AUTO SHOES"

Cord and Fabric Tires in all Standard Sizes

MANUFACTURED BY

AMES HOLDEN McCREADY LIMITED

HALIFAX, ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, LONDON, WINNIPEG, REGINA, SASKATOON, EDMONTON, CALGARY, VANCOUVER.

Our Guarantee Has No Time Or Mileage Limits

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 | TORONTO, MARCH, 1921 | Number 3

Columbus Show Points Way to Better Things

The Tractor Show Was a Wonderful Monument to the Miracle of Concentrated Power—Only Nine New Models Were Shown, But There Were Many Improvements on Standard Types

By C. M. McLENNAN
M. T. I. REPRESENTATIVE

COLUMBUS is a name that suggests discovery. Away back in 1492 the famous Christopher sighted land on his memorable voyage to America. Most of the members of his crew got "cold feet" and were ready to quit just as the little fleet was nearing its goal. But Christopher stuck it out against all odds, kept his eye on the horizon, and his hand on the helm, and won. The Columbus, Ohio, expedition into the unexplored sea of 1921 trade, sighted land for the power farming fraternity. It was a momentous discovery, and it cured some bad cases of frigid feet among certain members of the crew—most notably the manufacturers. We refer, as you may have guessed, to the Sixth National Tractor Show held in Columbus, Feb. 7-12th.

We are not going to say much about the rough seas, the fogs and shoals encountered on the voyage through the latter part of 1920. It was a rough ride in spots, it is true, and a considerable number of the passengers got sea-sick. The farmers put up an awful howl; the dealers anticipated it so long and talked about it so much that they would have been disappointed if the slump hadn't come. The manufacturers were like Rastus when he met up with the ghost—"just plain scared."

Most everybody thought they had been caught in a tide-rip that was pulling them straight to oblivion but Columbus brought them up with a jerk. It made people stop and think and really that is all that is necessary in any business contingency (notice we didn't say stringency). It made the trade realize the truth of "Hyatt" G. Weaver's apt remark that Congress has not yet repealed the law of supply and demand. We are fond of referring to agriculture as our basic industry. But we forget at times that there are seasons — that Spring is bound to arrive, that the sun will shine, and that seed will sprout and grow into crops and dollars that buy tractors and trucks—and everything.

Show Points Way to Better Things

In this issue Columbus occupied the role of the discoverer. It was the token of better days, the emblem of better thoughts—the kind of thoughts that breed optimism and make a man tighten up his belt, roll up his sleeves, and face the horizon. The hundreds of dealers and manufacturers who attended the Tractor Show needed to be sold all over again on American agriculture, and that goes for Canada too. That they were sold goes without saying, for there was a very tangible evidence of a change of heart. There isn't going to be any sudden revulsion or revival of trade, but Columbus was the starting point and all we have to do now is to go. The movement will gain momentum as the spring sunshine thaws out frozen credits, soils and souls.

Canadian Farmers Already Sold

Canadian dealers have the edge on their American colleagues, too, if a conversation we participated in is any gauge. An advertising man was talking about a joint publicity campaign on the part of American manufacturers. Some one asked if this proposed campaign would include Canada. The answer was "No, of course not. Canadian farmers don't have to be sold on the power farming idea. They already believe in it." There is something to cash in on. I believe this apostle of publicity was right, too, for some of these Central States farmers seem backward to a degree. I was going up in the elevator one night and a farmer from Lima who had never been out of his home county before remarked that he had never ridden so fast in his life.

Palms and Flags Decorated the Exhibits. I.H.C. Display.

Laying all jokes and banalities aside, the show was a marvel and a wonderful monument to the miracle of concentrated power. The exhibits were spread over seven big buildings at the fair grounds and the aisles were packed with keenly interested throngs of farmers, dealers, and manufacturers. There was universal wonder at the large number of farmers present. Many of them were believers in the gospel of power farming and most of them were converted to the tractor before the show was over. Some were out actually to buy. Others were curious. All were interested, and the majority travelled a fair distance and spent some money to satisfy that interest. This is the best omen of all. Direct results of the show lie in the future; but getting down to cases, one manufacturer who loads ten tractors to a car sold 20 carloads during the week. A traveller celebrated his signing up with another manufacturer by going out and selling three high-priced machines within twenty-four hours, all of which indicates that it can be done, and done easily enough to make everyone perk up and go after business with renewed vigor. All that farmers or dealers want to know is that they will not lose by buying now, and that the price represents intrinsic value in dollars and cents.

Few Radical Changes in Design

In looking over the various exhibits one could not help but be impressed with the fact that few radical changes in design have been made within the last year. Engineers and designers are probably convinced that the popular accepted types of machines now on the market are laid out along the lines that will prove permanent. Some models have been redesigned with a view of making them better production jobs because it is evident that with the competition of such large firms as Ford, Samson, International, and others to face, no manufacturer will expect his machine to compete whose assembly is a thrown-together proposition. The methods so successful in the manufacture of implements are dead so far as the tractor industry is concerned. One insignificant feature is the attention being paid to lug equipment, both by the makers of wheels and tracklayers. The Wallis was shown with several different types of lug and extension rim equipment, and the curious prospect was not long in finding out that lugs must be fitted to particular soil

conditions. It is significant that the tracklayers practically all have holes bored in the shoes for the attachment of lugs, and a number of types of track lugs were shown. Holt showed one caterpillar with chain grouters said to be self-cleaning, the ends of the chains hooking on the undersides of the shoes. A large number of accessory firms are exploiting this field, and numerous exhibits along these lines were shown.

A View of the J. I. Case Threshing Machinery Co., Display.

Many Attachments For Industrial Work

It is significant, too, that many of these attachments in the way of wheels and detachable lugs are for road work. Several manufacturers, most notably those producing tracklayers, are concentrating their sales efforts more intensively than ever toward the industrial and road markets. This is only natural when the amount of appropriations for road improvement is considered. The Holt Company, for instance, send 95 per cent. of their output to the industrial, lumbering and road working fields, and consider the farm end of their business as entirely secondary. This is due largely to the fact that they do not believe anything as small as a two plow tractor is practical, and they say that until the farmer realizes this and is prepared to accept the larger types, they will bend their efforts to the other channels.

Educational Features

Columbus demonstrated that educational features can be co-ordinated with a good show. From the explanations of the educational features of exhibits to the speeches at the banquets there was poured forth a wealth of sound advice and information regarding business conditions in general and power farming in particular. A visitor at the show could have spent his entire time listening to lectures and discussions with great profit. The managing committee of the show had arranged an excellent programme of lectures on power farming subjects. Speakers with national reputations discoursed on such subjects as soil conservation, adapting the farm to power, the trend in tractor design, community purchase of tractors, etc. The lectures were well attended and the interest was genuine. The American Society of Agricultural Engineers prepared an educational booth featuring power farming installations. This exhibit attracted much attention.

Survey of Exhibits

It is impossible of course to describe every exhibit, but a few of the outstanding features may be discussed briefly. About twenty models were presented for public inspection for the first time. Among these were products of two foreign countries, Fiat from Italy, and Renault from France, and two models of the S. O. M. U. A. rotary tillers and tractors, one a fairly large machine, and the other of the Garden tractor type of French make. The Fiat is fairly well known to Canadian dealers and will not need description here. Continental thoroughness is evident in the design. A muffler is provided and the front end of the tractor is spring mounted, the fan is of the airplane type, cast in a unit with the fan pulley and bearing housing. The engine is a symmetrical L-head job.

The Renault exhibit was a tracklayer whose makers claim that it does not crush the soil already plowed, its pressure being 4 1-2 pounds to the square inch, or 4 or 5 times less than that of a wheeled tractor. This machine is handled by the Renault Selling Branch Inc., 719 Fifth Ave., New York, and the company is now making plans for distribution throughout Canada. The retail price was quoted at $3,500 f.o.b. New York.

The S. O. M. U. A. handled by the Framerican Industrial Development Corp., was a three wheel tractor having two drive wheels in the rear and a small steering wheel in front, while behind is a rotating member shaft driven from the tractor transmission to which are attached many cutting hooks revolving at high speed. The machine cuts a width of 5 feet and is set to work from 2 to 12 inches deep. The engine is of the 4 cylinder vertical type turning over 1,200 r.p.m.

While discussing rotary tillage it might be well to comment on the one American display of this class—that of the Once-Over Tiller Corporation, of Minneapolis. A new model was shown, the tractor element being of the front wheel drive type of heavy construction. To this are hitched two plow bottoms which are raised and lowered by the power of the engine, and at the side of each mold-board are the rotary knives that pulverize the furrow slice as it is thrown from the mold-board. The rear supporting member is a single wheel locked in position while travelling straight ahead, but swivelling when corners are turned. The essential difference between the Once-Over and all other rotary tillers is that the former cuts and inverts a furrow slice as well as shredding the soil while others shred directly without cutting a furrow.

New American Models

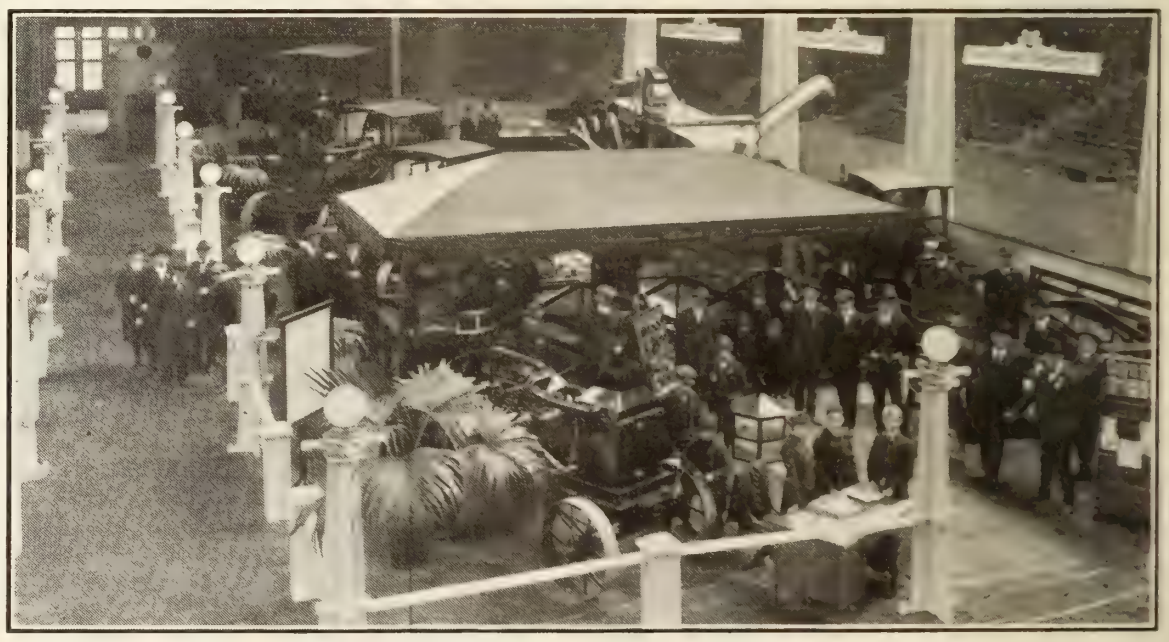
Coming to the new American products of standard design, one of the most impressive was the new Case 42-70 model because it is the first time that any gas tractor of what might be called the 30-60 class has been built along lines now familiar in our two and three plow models. The new Case is merely a big brother of the other three Cases, the 10-18, 15-27 and 22-40. Every gear is enclosed and all are from forged stock with cut teeth and heat treated. The engine is of the familiar Case design, 4 cylinders vertical, valve-in-head, removal cylinder sleeves, dimensions 7x8 inches, turning over 650 r.p.m. and giving a piston travel of 867 ft. per minute. While rated at 70 h.p. on the belt it actually scales 90 h.p. on the dynamo-meter beam.

Sixth National Tractor Show

The Bates people sprung a surprise in the form of a wheel type model in which the same engine and transmission used in the tracklayer has been cleverly adapted to wheel drive. Another impressive machine was the new Hart-Parr two-plow model, showing many little refinements, the sum total of which will make all the difference between a satisfying outfit and one that is always causing trouble. A full description of this tractor was given in the January M. T. I.

The Allwork II was shown with a 3-speed transmission. The engine is of the company's own make with 5 bearings on the crank shaft. The machine is low enough to qualify as an orchard tractor which does not detract in any way from its usefulness in general farm work. Anti-friction bearings are used at all points outside the engine and consist of single and double row balls, straight solid rollers, Hyatts and Timkens.

Such familiar makers as the J. I. Case Plow Works, makers of the Wallis Tractor, Avery Co., International Harvester Co., Minneapolis Steel and Machinery Co., Advance Rumely, Nichols & Shepherd Co., Fordson Tractor Co., Aultman Taylor, Holt Mfg. Co., John Lauson Mfg. Co., Monarch Tractor Co., Samson Tractor Co., Rock Islands Plow Co., Oliver Chilled Plow Works, Cleveland Tractor Co., Timken Roller Bearing Co., Hyatt Roller Bearing Co. and many others had splendid exhibits. The Timken Co. had a very excellent educational exhibit and the Hyatt Co. made a hit with their paper bags which were used extensively by visitors to carry literature in. Stamped on these large paper envelopes were the words, "Hyatt Carries the Load." A large number of accessory companies had interesting displays. The tractor accessory game is developing into a very important factor as the need for these various appliances becomes apparent. There was a splendid array of garden tractors and equipment, disc harrows, cultivators,

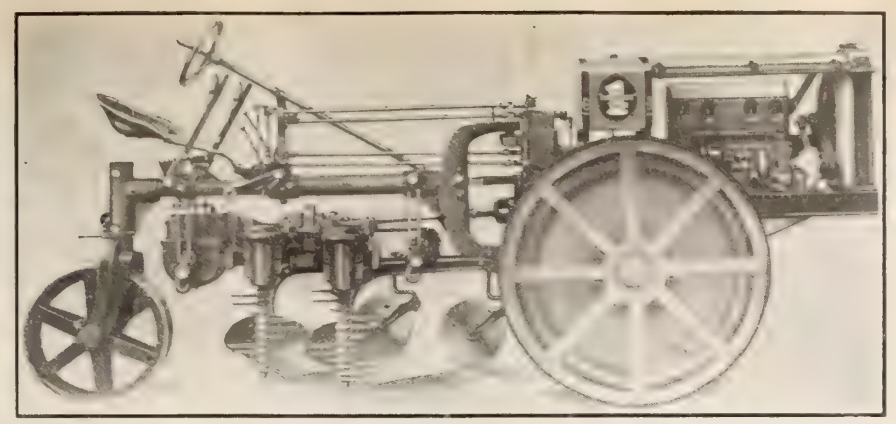


The Advance-Rumely Exhibit Was an Interesting One.

plows, mowing machines, belt machines, and orchard equipment on hand as well. Even to begin the description of these exhibits is impossible.

Tractor Equipment Exhibits

The event was pre-eminently a tractor show but no one who attended was permitted to forget that after all the tractor generates the power and the implements and machines do the work. There is a complete line of tillage implements built especially for tractor use, and after looking over this part of the show we concluded that we had seen equipment for doing every conceivable farm operation of any importance. From the standpoint of efficient operation behind the tractor there has been a marked improvement in disc harrow construction during the past year. A model brought out by B. F. Avery & Sons about a year ago seems to have stimulated activity in this field. The Rock Island Plow Co., makers of the Heider Tractor, and Rock Island Plows, and other tillage implements, has made the final connection between the front and rear gangs by means of a universal joint action which tends to make the action of the two sections independent of each other. Representatives of Deere and Co. were anxious to explain the features of Model L, tractor disc harrow. This implement is leverless, the gangs being angled by a worm which can be operated from the tractor seat with the outfit in motion. The Emerson-Brantingham Co. has attached an automatic angling device to the disc which it manufactures. This is a plow type clutch driven by chain and sprockets from the axle of one of the front gangs. The action is controlled by a rope operated by the tractor driver. This same device has also been applied to effect the raising and lowering of the disc on a grain drill with two section axle. These changes are indicative of what can be done on the old disc harrow when the engineers become convinced that improvements are possible and desirable.



The Once-Over Tiller Tractor Makes a Perfect Seed Bed, as the Land Is Being Plowed.

Light Plant Exhibits

There was a marked falling off in the number of farm lighting and power plants as compared with the 1920 show, but this is not surprising in view of known conditions in the trade and the fact that most manufacturers of this line have established specialty retail connections that were doomed to pass with the end of easy money days on the farm. Four representative plants were shown however, three of which, the Sunbeam, Ker-o-El and Stearns, have been on the market for some time. The Kohler was the new one and drew considerable interest, both because of its design and from the fact that it is made by a large and long established organization, the Kohler Co., of Kohler, Wis., makers of plumbing ware. The Kohler plant is of the class A type, no storage batteries being used for light or power, all the current coming directly from the 1,500 watt generator. One storage battery is utilized for starting only and this is automatically charged.

Display of Motor Trucks

This was the first time that trucks for farm use have been shown at a National Tractor Show. While the exhibit was not large it served to indicate that several tractor manufacturers have entered this field. There was only one truck exhibit by a firm not producing tractors. This was the Atlas. Thirteen trucks were shown and nearly all of them were built especially for the farm trade. It is interesting to note the distribution as to capacity: Two were 3 1-2 ton trucks; two were 2 ton; three were 1 1-2 ton; one 1 1-4 ton; three 1 ton; two 3-4 ton. The International Harvester Co. showed four models, Moline Plow Co. showed its 1 1-2 ton farm truck, Graham Bros. showed a 1 1-2 ton speed truck, the Advance Rumely Thresher Co. exhibited a 1 ton truck wholly in keeping with the requtation which this company has earned in the 'ractor field. The Avery Co. has added a 1 ton truck to its line of power farming equipment. J. I. Case 2 ton truck, made by the J. I. Case Plow Works, is a worthy companion of the Wallis tractor made by this company and the Wallis tractor motor 4 1-4 x 5 3-4 is used as the power plant. Two models of the Samson truck were shown, one in the speed wagon class, and the other a 1 1-4 ton job. The Minneapolis Steel and Machinery Co. exhibited a 3 1-2 ton truck with a Twin City 4 1-4 x 6 16 valve-in-head motor with an S. A. E. rating of 29 h. p.

A Steam Tractor

A report of the tractor show would be incomplete without a brief description of the Bryan Steam Power Plant shown for the first time. Our readers are probably familiar with the steam automobile. This principle has been adapted to the tractor and is expressed in the Bryan job made by the Bryan Harvester Company, at Peru, Ind. The Bryan steam boiler is the water tube type. Tests made on this boiler show that it is on the average about 80 per cent. efficient. This is nearly 50 per cent. more than any other boiler or generator of its size. The tubes are arranged in staggered form and connected to a steam dome and two headers or waterlegs fitted together compactly. This device provides the greatest heating surface for its comparative size and is the lightest in weight. It is a fact that the smaller the tube in this type of boiler the more rapid the circulation. The boiler is so proportioned that dry steam is produced under any and all conditions. The makers claim that it is possible with the Bryan boiler to raise 100 pounds of steam in one minute from cold water. Under operative conditions the steam pressure will raise from 400 to 500 pounds in approximately 14 seconds.

The Bryan Light Steam Tractor is the first and only automotive vehicle propelled by steam which uses a piston valve engine. The Bryan is equipped with this type of engine for the reason that it has proven conclusively to be the most successful. All shafts, piston rods, eccentric rods, main rods, and cross heads are of heat treated chrome, nickel steel. When this tractor was announced prior to the first public display many expected a freak design. When the machine was discovered to be along conventional lines and unlimited in power range the tractor world was awakened to the unlimited possibilities of steam for future power, especially in view of its ability to utilize distillate or kerosene as fuel.

Winnipeg Automotive Equipment Show

Ten Thousand People Daily Visit Initial Holding of Western Canada Automotive Equipment Show in Winnipeg---$185,000 Worth of Equipment on Exhibition

MUCH success attended the initial holding of the Western Canada Automotive Equipment Show, recently concluded in Winnipeg, and it was the opinion of retail hardware merchants and others handling automobile accessories that much educational work of value was achieved by the show. Expressions of opinion from several foremost United States manufacturers of accessories who visited the show were that from an artistic standpoint, booth construction and displaying of small lines, nothing equalling the exhibition had been seen.

The show opened every morning at 10 a.m., remaining open until 10 p.m., and lasted for a week. During that time large crowds of people and many retailers from the city and surrounding district visited the exhibits and took great interest in examining the latest equipment. There were seventy-two exhibitors. A splendid orchestra, playing from 2 to 5 in the afternoon and from 8 to 10 in the evenings, helped the social spirit of the occasion.

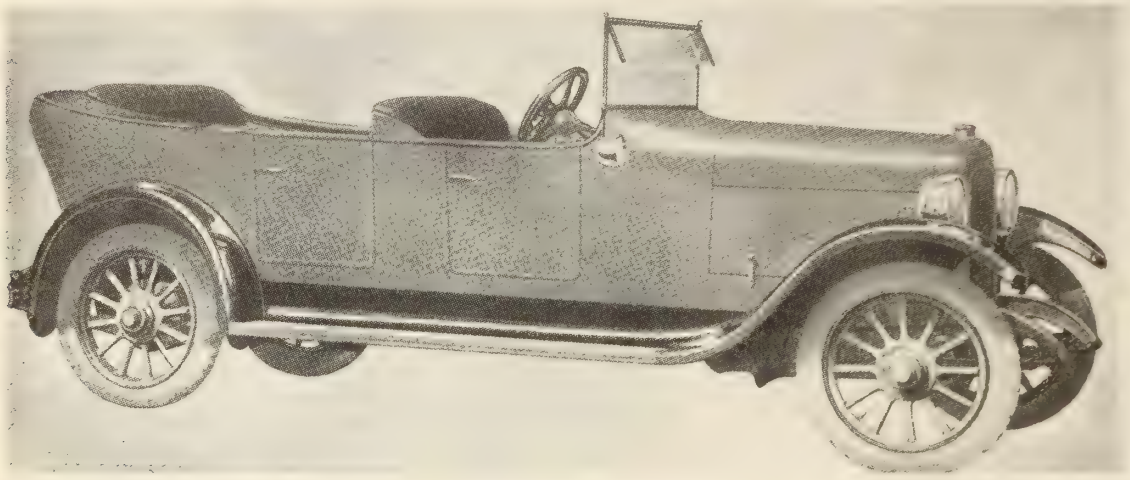
Manufacturers and jobbers of automotive equipment from all parts of Canada and the United States were represented in exhibits of all the standard lines of equipment. The total value of the exhibits was estimated at over $185,000. Oils and greases of all varieties, spark plugs, shock absorbers, batteries, tires, chains, radiators and many other accessories were to be seen, all arranged in pleasing manner. The hall itself was well decorated with flags and bunting, and each individual booth was given special attention.

More than ten thousand persons visited the show on the opening day and similar attendance was on hand each day throughout the show. Bonspiel visitors from the surrounding district were prominent among those in attendance. Exhibitors all reported good results in the way of establishing connections with present customers and making new connections. Sales were quite numerous. The exhibition was officially opened by the Lieutenant-Governor, Sir James A. M. Aikins, who declared that he had not thought it possible that such a show could ever be put on.

Exhibitors included the following: The Manley Manufacturing Co., A. H. Fraser & Co., Russell R. Sutherland, Motor Products Ltd., S. C. Johnson & Son, Ltd., Richardson-Green Ltd., Canadian Fairbanks-Morse Co., Ltd., Mutual Oils Consolidated Ltd. of Canada, Acme Magneto and Electric Co. Ltd., Canadian Oil Companies Ltd., Jos. St. Mars, Oak Tire and Rubber Co. Ltd., Prescott W. Robinson Sales Co., Ltd., S. F. Bowser & Co., Ltd., British American Oil Co., Ltd., Northern Electric Co., Ltd., Tuthill Spring Co., Imperial Oil Limited, Burd Ring Sales Co. of Can., J. B. Lawrence & Co., Sales, Ltd., A. J. Hopkins, Marshall Wells Co., Ltd., North Star Oil & Refining Co., Ltd., Great West Saddlery Co., Ltd., Wood-Vallance Limited, Canadian General Electric Co., Ltd., Globelite Battery Co., Ltd., D. Ackland & Son, P. A. C. McIntyre Co., Ltd., Weaver Manufacturing Co., Miller-Morse Hardware Co., Ltd., Burgess Batteries, Ltd., Lion's Auto Garage, Ltd., W. H. Hodgson & Co., A. Strong, The Polar-Liquid Co., Ltd., Hercules Bumper, Ltd., Moncrieff & Endress, Ltd., Hurst Auto Heater, North Star Anti-Freeze Co., Pyrene Mfg. Co. of Canada, Ltd., B. and M. Rubber C., W. L. Renton & Co., Edw. White Co., Peters & Herron Co., Wm. M. Gordon & Co., Standard Machine Works, the Porcupine Sales Corporation, Ltd., W. Bruce Campbell, Canadian National Carbon Co., Prest-o-Lite Co. of Canada, Ltd., Canada Dry Cells, Ltd., Globe Shirt and Overall Co., Canadian Raybestos Co., Ltd., Essenkay Distributor, Champion Spark Plug Co. of Canada, Ltd., J. R. May & Co., J. H. Ashdown Hardware Co., Ltd., Richards-Wilcox Canadian Co., Ltd., Ronald J. J. Muir, J. & B. Manufacturing Co.

Two British Cars for Canadian Market

THE advent in Canada of the "Austin Twenty," manufactured by the Austin Motor Co., Ltd., of Birmingham, and the "Armstrong Siddeley Six-cylinder," manufactured by the Armstrong Siddeley Motors, Ltd., of Coventry, England, both with branch offices and agencies here, is striking proof that British automobile concerns are seriously considering Canada as a fruitful market for their products.



The Austin Twenty Touring Model.

"Austin Twenty"

THE Austin line is shown in touring, coupe and landaulet types. The engine has 3¾ in. bore and 5 in. stroke and has a 22.4 h.p. rating. The main cylinder block has valves all on near side, each with detachable head. The engine has aluminum pistons, correctly machined connecting rods, and five bearings. Lubrication is by a gear-wheel pump, forcing oil to all bearings through the hollow crank shaft. The cylindrical gauge filter in the sump is easily removed for cleaning. A broad silent chain rotates the cam shaft and also spindle on the near side, driving the magneto and centrifugal water pump. Fan and dynamo are driven by separate belts from the crankshaft. The carburetor is automatic and fed by an Autovae tank, while the inlet pipe adjoins the exhaust pipe.

Other specifications are as follows:

Clutch.—Single-plate, with Ferodo friction surfaces. It is carried in one unit with the engine and gearbox, and the whole is three-point-suspended.

Gearbox.—Four forward gears and a reverse are provided, and changes are effected by a lever mounted centrally on the top of the box.

Transmission.—Final transmission to the live semi-floating rear axle is by shaft through helical bevel gear mounted on roller bearings and having ball thrusts.

Brakes.—Expanding pedal-operated brakes act in the rear hub drums, and the centrally mounted hand-brake applies lined shoes directly to a drum behind the gearbox.

Wheels.—Detachable artillery wheels of the usual Austin pattern are fitted. Front wheels run on roller bearings and rear wheels on ball bearings.

Suspension.—Road springs are semi-elliptic and the underslung rear ones are 60 in. in length, giving very easy riding.

Fuel Capacity.—Fifteen gallons of fuel can be carried in a very accessible tank, under the driver's seat. It has a dial gauge showing the amount of fuel remaining.

Equipment.—Electric lighting and starting, speedometer, two spare wheels, five lamps and the usual supply of tools.

Wheelbase	10 ft. 9 in. (3.279 m.)
Track	4 ft. 8 in. (1.422 m.)
Length over all	14 ft. 11 in. (4.547 m.)
Width over all	5 ft. 2½in. (1.585 m.)
Body space	8 ft. 10½ in.(2.707 m.)
Tyres	32 in.by 4¾ in. (820 m.m. by 120 m.m.)
Ground Clearance	9 in. (230 m.m)
Weight of Chassis	20 cwt. (1016 kilo.)
Weight of Touring Car	29 cwt. (1473 kilo.)
Weight of Coupé	31 cwt. (1574 kilo.)
Weight of Landaulet	32 cwt. (1625 kilo.)

On the steering wheel are throttle, air, and magneto control levers, while the simple control is completed with clutch, brake, and accelerator pedals, and central gear and handbrake levers. The instrument board carries speedometer, oil-pressure gauge, ignition and lighting switches.

Body Design

The touring body, which has five seats, is comfortable and of graceful and harmonious appearance. It is finished in selected grey, dark blue or dark green. The driver's seat is adjustable as to inclination and distance from the pedals after slackening a nut on each side. The hood, which can be operated single-handed, folds back into a case in the back of the body. These have a graceful sweep from radiator to wheel case, and are not interrupted by any encumbrances whatever, due provision having been made, out of sight, for battery, toolbox, spare wheels and hood. Side curtains, by means of which the interior can be completely enclosed, are supplied.

The coupe model has four seats. That of the driver is adjustable so that a comfortable sitting position for adequate control can be secured in every case. Access to the rear seats is obtained by moving forward the near side front seat. Upholstery is in black. The hood, made of black rain-proof material, is easily folded back, and the framework of the front windows folds neatly away. It is rigidly secured when raised. Ventilators are fitted to the dash.

The landaulet seats seven persons, including the driver: the two front interior seats can be folded when not in use. Interior upholstery is in grey hair-line, the side windows are moved silently and easily by means of a rotating handle at the side of the car, a roof light is fitted, and a speaking tube communicates with the driver. The equipment is of the highest quality and finish, and thoroughly complete.

The head office for Canada of the Austin Motor Co., in charge of Major H. J. Cupper, will be in Montreal and in a few weeks resident representatives will be appointed for Halifax, Quebec, St. John, Ottawa, Toronto, Hamilton, London, Winnipeg, Regina, Calgary, Vancouver and Victoria. Negotiations are now being carried on with the Dominion Customs authorities in regard to duties that will have to be paid.

Armstrong Siddeley Six-Cylinder

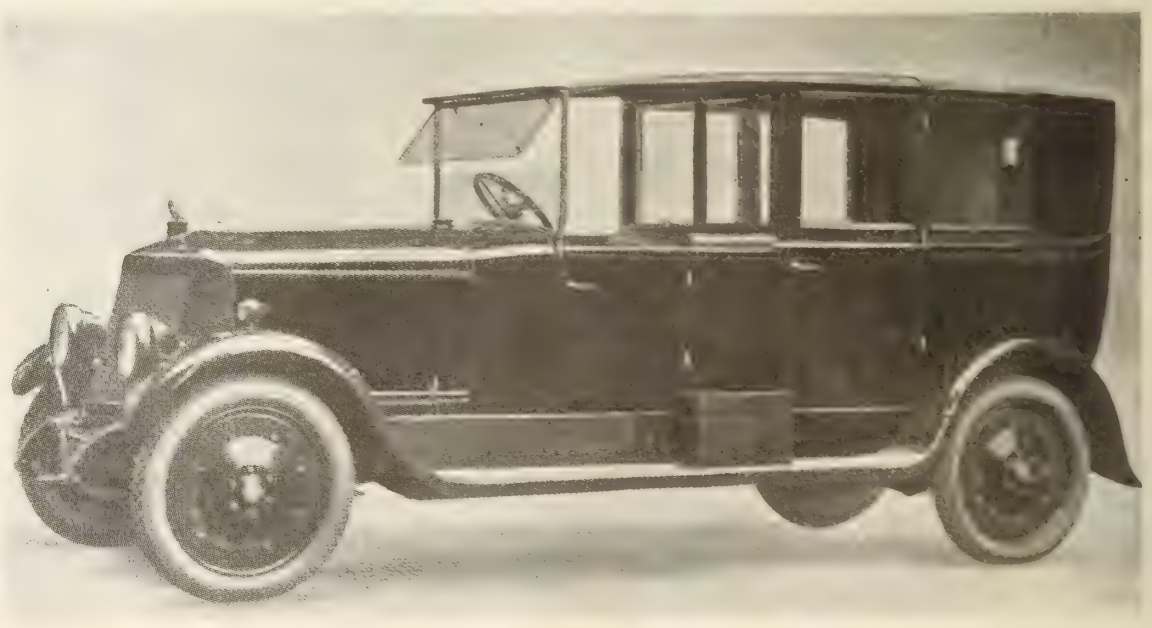
IN broad outline the special features of the Armstrong Siddeley chassis comprise a six-cylinder overhead valve engine, provided with a multi-plate dry clutch. The three-speed and reverse gear box forms part of the rear axle assembly, being carried on the forward end of a stout propeller-shaft casing. A spiral bevel final drive is used, and the rear axle is mounted with adjustable cantilever springs. The front axle is remarkable for the neat arrangement of the steering swivels, the frame is of unusual design and width, and has the side platforms incorporated with its construction, and, lastly, a new form of light detachable disc wheel is employed.

The engine has a bore and stroke of 3½ x 5¼ in., the six cylinders are formed in two sets of three, the iron castings being of simple internal arrangement. The sides of the jackets consist of separate aluminium plates, and an aluminium cover is used at the top to close in the water spacing around the valve seatings and ports, the latter being all upon the near side. Tulip pattern valves are used, and these take their seatings directly in the metal of the combustion heads, phosphor bronze bushes being used for their guides, and a split cone device employed in conjunction with the collet for the retention of the valve spring.

For the inlet and exhaust gases separate manifolds are bolted to the near side face of the cylinder blocks, the exhaust pipe running down the front of the engine, the silencer proper being carried towards the rear of the chassis as usual. With the aluminum cover of the cylinder is incorporated the header water pipe, and an entry manifold for the water circulation is positioned towards the bottom of the aluminum side plates of the water jacket convenient to the water pump.

Light cast iron pistons are used, having three rings, two close to the crown and one just above the gudgeon pin, the latter ring being a scraper, holes are provided through the skirt of the piston through which surplus oil can flow. The hollow connecting rods are machined all over, and carry phosphor bronze bushes for the gudgeon pins, which "float."

Three die cast white metal journal bearings support the crankshaft, which is of massive proportions



Armstrong Siddeley Six-Cylinder, Closed Model.

and carefully balanced. The crank pins are hollow, steel caps being used to close the ends, the pressure-feed lubrication is circulated through the cranks. Like the crankshaft, the camshaft is also carried in three bearings, and the cams are integral with the shaft.

Lubrication is obtained by the force feed system. Towards the centre of the engine the sump of the bottom half slopes downwards, and at the lowest point is to be found a spur gear type of pump driven by vertical shaft and skew gears from the camshaft. This pump serves its oil through a cylindrical filter contained on the off side of the crank case to a gallery pipe, whence the oil is fed to the main crankshaft journals through the crankshaft to the big ends; the pistons and gudgeon pins are lubricated by splash. The camshaft bearings are lubricated by pressure feed, oil circulating from the main bearings through ducts in the crank case.

On the near side of the rear of the engine is a cover, through which oil is passed into the crank case via a filter, and a float indicator is provided to show the level.

The clutch is the multi-plate dry type, held up to its work by a spring contained in the hollow end of the crankshaft. A plain bearing is used for the clutch spigot, which is surrounded by a cylindrical chamber containing a large quantity of oil.

Drive from the clutch is taken through a Siddeley form of universal joint, consisting of a spherical head in which three large steel balls are countersunk, the outer portion of the balls engaging with three grooves in a pot in which they are free to slide. Mounted on the driving member of the clutch is a belt pulley for the Lucas electric lighting dynamo, which is tucked away under one of the gussets of the middle cross member, provision being made for access to its brushes and for adjusting the belt. At the rear end of this clutchshaft is mounted a ball bearing Hookes joint, contained in a spherical casing, and lubricated from the gear box.

The gear box, which contains three forward speeds and reverse, is rigidly attached to the forward end of the propeller-shaft casing, and the box itself carries at the front a ball end, resting in a bracket bolted to a massive cross member. The driving shaft of the gear assembly is carried at the front on a ball race, and the spigot extends right through the driven shaft to the back of the box, the spigot itself running on two roller bearings, an unusual piece of design, which has the effect of cutting out certain bearings from the front of the gear box, thereby reducing noise in running, and shortening the overall length of the shafts, which are correspondingly stiffened. Stub teeth of a durable form are used for the gears, and in the upper pinion of the constant mesh gear radial holes are drilled, through which oil is fed to the roller bearings of the spigot. The reverse pinion also is carried on roller bearings. As no rear universal joint is necessary in the gear box, the driving shaft is coupled directly to the tubular propeller-shaft mounted at the end of this shaft. A skew gear provides a properly enclosed speedometer drive. The reduction in the rear axle gives a gear ratio of 3.69 to 1 on the direct top gear, whilst the first and second speeds give ratios of 12.41 to 1 and 6.01 to 1 respectively, the reverse being 15.9 to 1. For the lubrication of the gear box oil is used and a pocket is provided to collect oil and distribute it to the bearings.

An aluminium casting forms the centre of the rear axle casing, to which are bolted tapered steel tubes carrying the axle brackets and the hub bearings. The propeller-shaft casing terminates in a bracket which bolts to the aluminum centre, and at the same time carries the bevel pinion, the ball races of which are housed in a sleeve, which can be adjusted axially in special facings, the movement of the housing being regulated by a screw thread cut on its exterior circumference. This adjustment, which is for setting the meshing of the spiral bevel pinion, is controlled by a castellated nut, provided with locking gear, which can be reached from outside the casing, so that the mesh can be adjusted without dismantling the axle. A bevel type of differential gear is used, on the outside of which the crown spiral bevel is attached. The assembly is carried, on each side, in a large ball race backed up with a ball thrust washer. Solid tapered axle shafts are employed, and the wheel hubs are supported on a single ball bearing inside the axle end, the second bearing of the wheels being provided by the main bearings carrying the differential assembly.

Both foot and hand brakes are carried within the rear wheel drums; they are of very large diameter and Ferodo-faced. The two shoes are expanded by means of an adjustable toggle link device in each case.

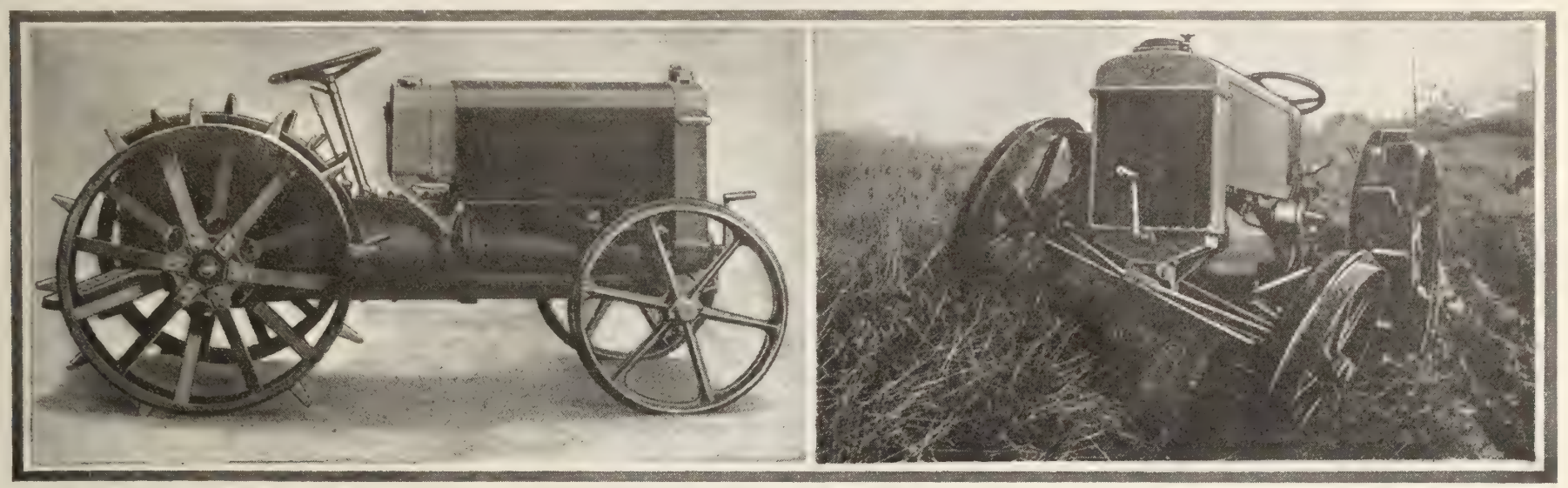
There is a new departure in the construction employed for the disc wheels. To the hub of the wheel is bolted a large diameter brake drum. The brake drum itself forms the centre of the disc wheel structure, and to the outer circumference of the drum is bolted a second and a larger disc reaching to, and providing anchorage for, the beaded rim in which the tyre is fastened in the usual way. This tyre rim and disc portion is detachable and interchangeable between the front and rear wheels, there being on the front hubs a disc of equivalent diameter to the rear brake drums. A very special feature of this construction is that the ball races of the rear wheels come directly in the centre line of the wheel itself, there being no overhang.

The frame has four cross members: one at the front of the engine, one between the engine and gear box, one not far from the rear axle, and the last at the extreme rear of the frame. A considerable saving of weight has been effected by the use of pressed steel members, which are riveted to the side members of the frame, and form the running boards and part of the wings themselves.

The chassis, as complete and ready for the body, is fully equipped with all wiring, mudguards, instrument board lamps, and such like details, in position.

The bodies are standardized by the Armstrong Siddeley Co. A full range of open and closed types is offered.

The use of a V-shaped radiator placed at the front of the chassis, coupled with the bold and almost horizontal lined bonnet, is a new departure for the firm. Following the modern tendency, the radiator is contained in a separate sheathing.



The British Austin 25 H.P. Tractor.

The British Austin 25 h.p. Tractor

OF great interest to agricultural Canada is the announcement of the Austin Motor Co., of Birmingham, England, that they intend, during the present year, to market in Canada their 25 h.p. tractor.

Since the beginning of this year a factory representative, in the person of Major H. J. Cupper, has been laying down the policy under which the Austin automobile is to be introduced in Canada. Plans have progressed so far as to permit of attention being given to the introduction of the farm tractor.

The engine of the Austin tractor is simple, robust and powerful in construction.

It develops 25 h.p., and has four cylinders of 3¾ in. bore and 5 in. stroke, cast en bloc, with detachable head. The crankshaft is supported on five bearings, all of which are lubricated by oil, which is pumped through the hollow shaft. Valve tappets are adjustable.

The engine is started on gasoline, but runs normally on kerosine, which is fed from a 10 gal. tank to the automatic carburetor. Air reaches the carburetor through a cleanser and a box heated by the exhaust gases, and thoroughly vaporizes the kerosine.

Ignition is by magneto. The cooling is on the thermo-syphon system. The radiator is cooled by a gear-driven fan, which has enclosed bearings.

Lubrication is obtained by a gear-wheel pump which supplies oil to the main bearings, and to the big-end through channels in the crank-shaft and crank-pins.

Transmission is through a cone clutch, having a friction surface, renewable in segments, by bevel gear to the belt pulley shaft and thence through the gear box and spur gearing to the differential gear on the back axle. All gears are forged steel, case-hardened and run in oil; their shafts are carried in roller bearings.

Forward speed is 2½ and 4¼ m. p. h.; reverse is 2 m. p. h.

On low gear the makers claim that the tractor will, using kerosine, maintain a draw-bar pull of 2,500 pounds, which is ample for plowing at once three 10 in. furrows 6 in. deep in medium soil. On the road, it is claimed, the tractor will haul a load of 4 tons at 5 m. p. h., and will mount with it a gradient of 1 in 11.

A twenty inch diameter split pulley is provided, and through a 5 in. belt will drive all kinds of machinery, including a 54 inch threshing machine.

Steering is by worm and sector, and the gear is enclosed in the main casing. The front axle is spring-pivoted and capable of movement to accommodate the wheels to irregularities of the ground surface, without putting the slightest strain upon the trunk chassis or engine.

By means of separate levers for each wheel, brake shoes are expanded in drums affixed to the wheel hubs.

The dimensions are as follows:

Wheel base, 5 ft. 8 in., 1,727 mm.

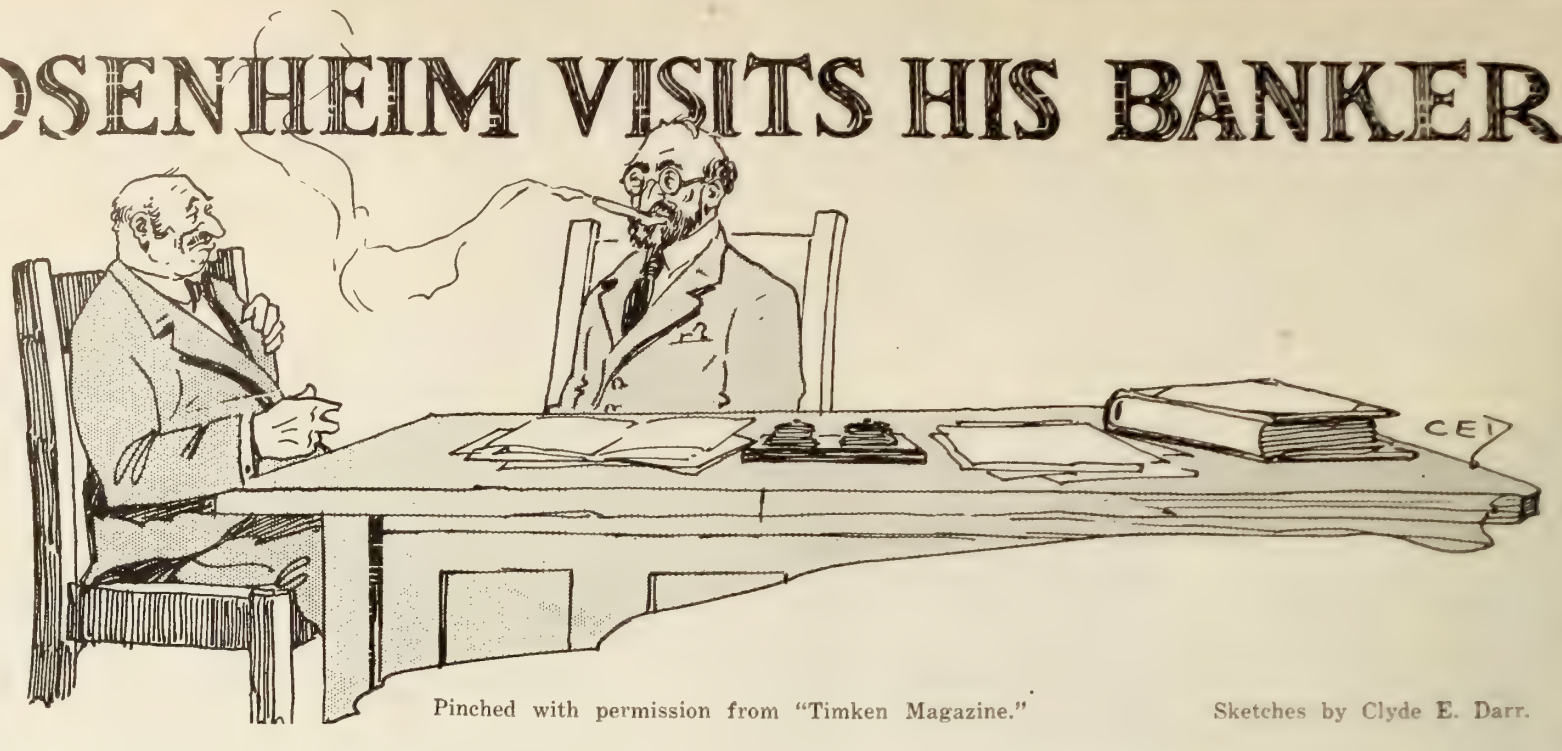
Track (centres), rear wheels, 4 ft. 0 in., 1,219 mm.; front, 4 ft. 0 in., 1,294 mm.

Width (overall), 5 ft. 1 in., 1,550 mm.

Length, 9 ft. 2 in., 2,796 mm.

Wheels, front, 30 x 6 in. face 762.152 mm.; rear, 42 x 10 in. face 1,067.254 mm. Weight, 28 cwt.

ROSENHEIM VISITS HIS BANKER



Pinched with permission from "Timken Magazine." Sketches by Clyde E. Darr.

"WELL, the Greeks they elected that feller Constantine as King again and right away he wants to borry thirty or forty millyun dollars," remarked Meyer Goldman to his friend Max Rosenheim, proprietor of the Scotch Woolen Mills, high grade men's and boy's clothing.

"Yes," replied Max, "and I bet he gets it, with mebbe nothing for security but the Athens city hall and a coupla lots in Crete. One of the easiest things what a King can do is to go out and borry money on his business prospects, and he don't have to morgidge his throne or leave his crown in the bankers' safe. They just say, 'Good morning, King, how is Mrs. King and all the little Kings, and will you have it all in big bills, or part gold?' But when a business man needs a little capital and goes to one of them bankers he must give a detailed statement of his commercial history since 1882 and show that the fillin' in his teeth is not less than 22 karat. When you put money in a bank, all the security you get is a pass book and a ten-cent calendar, with a notice that if your account averages below a certain amount they don't want your trade. But when you want to borry a little money they take out the interest in advance and probly report to the police that you're a suspishus character and will need close watchin' for ninety days."

"But, Max, a bank makes all its profits from loans, so it stands to reason that they are glad to loan money on good security."

"Meyer, a banker is the only business man I ever saw what hems and haws and hesertates when he has a cash customer ready to pay him a profit on his commoderty. When a man comes in here to buy a suit of clothes I use the best salesmanship what I know to get him to take it, but when a banker's customer wants some o' his goods, the banker usually has nine or ten reasons why he can't make the loan, but finally is persuaded to accept a ninety-day note and an apology for botherin' him."

"A banker has gotter be careful, Max. If he makes too many mistakes, the bank examiner will be after him."

"Yes, and so has a clothing dealer or an ottermobile dealer or any other kind of a dealer gotter be careful too. If he makes too many mistakes the sheriff will be after him. The Federal Reserve Board it tells the bankers to be careful and not overload themselves with ottermobile paper, and instead of usin' common sense and makin' loans accordin' to good judgment, the bankers freeze up and say an ottermobile is a luxury and right away shut off on all loans to the dealers. Then we have a panic and anybody what wants a loan is as welcome in a bank as a burglar."

"I notice you are makin' a twenty per cent. reduction on all suits, which still leaves you an average of eighty per cent. profit, and with the good business what you have, you ain't got to borry money. So I guess, Max, you're lucky."

"Meyer, like all the rest of the yumerists, you think the clothing deelers are a lot of profiteers, and when you come in here last summer a-wearin' them overalls, I suppose you thought you was helpin' in bringin' down the cost of livin'. I make more profit in sellin' overalls at that time than I make in a year before. When the slump comes it ketches me with a line of goods what I bought at peak prices and the reductions I make don't get me even on ackshell cost, not countin' the overhead. Sure I have to borry money."

"Well, I bet the bank was glad to let you have it."

"If they was glad they concealed their joy so you couldn't see it. You know, Meyer, I carry an account at the First National where Abraham Fishcorn is president. When I go in there the other day old Abe rushes up to me with his hand outstretched and greets me like a long lost brother. 'Good morning, Mr. Rosenheim,' he sez, 'glad to see you. It looks like we are goin' to have a great revival in bizness. Factories are reopenin' everywhere, stores are crowded with buyers, and we can expect a steady, sensible, sane and conservative volume of business which will in the end prove more satisfactory than an abnormal boom which is allus followed by the inevitable reackshun. I spose you are in this mornin' to increase your deposit. And, say, Mr. Rosenheim, it's a fine boy you have in little Abie. I take an interest in him seein' we have the same given name. Why don't you start him off this year with a Christmas savings account to be cashed in next December?'

"See, Meyer, his mind is so busy thinkin' how to get your money in his bank that he doesn't reelize that a Jewish Christmas account would be like the Anti-Saloon League savin' up for a champagne banquet.

"'No, Mr. Fishcorn,' I tell him 'what I come in this morn,' was to see about negotiatin' a loan.'

"Right away, Meyer, his face fell like he has heard bad news, and he says, 'I see, I see. Perhaps we can arrange it. But you know, Mr. Rosenheim, the outlook for business in the near future ain't what you call bright. Europe is makin' enormous demands on our resources and there is great uncertainty as to what the new administration will do regardin' the excess profit taxes, the income tax and the soldiers' bonus. Then we are worried considerably over the attertude of Japan in regard to the California alien land law, and the Irish question is causin' grave concern in finanshul circles. Then there is Rooshy,' he goes on sorrowful like. 'Rooshy is in a state of chaos and we ain't certain just what Lennon is a going to do. And then there is China. The famine in China is sure to call for an immense expenditure of money. And the Fiume incident isn't settled by any means just because D'Annunzio surrendered. Then you know, France needs money, Holland needs money, Sweden needs money—'

"'Never mind, Mr. Fishcorn,' I interrupts, 'we'll just admit that they all need money and let it go at that. Also we will admit that the kangaroo

market in Australia is jumpy, and the earthquake district in South America is shaky, and that snails are a little slow in France, and that ice in Greenland is low on account of overproduction. Let's get back to America and see if Max Rosenheim can borry a little money on good security, understand.'

"When I pin him down to it, Meyer, he invites me into his private office, takes a cigar out of a box and then locks the box in his private safe; and then he frowns and asks me how much I want. I tell him, and he bites a pencil a few minutes and then rings for a clerk and asks for a statement of my account and a report on the clothing industry. Next he unfolds one of them funny maps what Mr. Babson sends round and studies the colors on it, until I gets so nervous that I can't keep still and I sez, 'Mr. Fishcorn, mebbe you better get Washington on the long distance and see what President Wilson thinks about this here matter, and if he's too busy packin' up, y' understand, you might switch over to the Treasury Department and get Mr. Houston's idees on the subjeck, because I'm a peace lovin' man and if my borryin' money of you is a goin' to affeck the rate of exchange between here and Zanzibar or Abyssinia, why, it's all off, understand, and I'll see what I can do with Rachel's fur coat and diamonds over in Mose Morgenbaum's pawn shop.'

"And do you know, Meyer, that gonef didn't get the sarcasm at all. He just writes down, 'Wife has fur coat and diamonds' on a memorandum pad and puts it in the file. When he finally puts his O.K. on the loan I gets me out quick for fear he'll try to make me deposit it in a savings account where I'll draw four per cent. on it while Im payin' him six."

"Well, you got the money, didn't you?"

"Sure I got the money, and I knew I'd get it all the time because it was secured, and I been a depositor there for twenty years. Old Fishcorn knew I'd get it the minute I told him what I wanted."

"A bank must be conservative, Max. They must pick their customers carefully."

"They do, Meyer. They pick them carefully—and thoroughly."

Suggestions for Selling Tractors in 1921

If Implement Dealer Listens to All the Discouraging Talk He Hears He Is Likely to Form the Opinion That it is Impossible to Sell This Spring—However, Men Who Have Gone After the Business Have Sold as Much as in Former Years

By ARNOLD P. YERKES

ARE you waiting for tractor business to come to you this spring the same as it did last year? If so, you will doubtless be disappointed in your volume. On the other hand, if you are going after the business like a real salesman the chances are you will find the trade is considerably better than many people profess to believe. This is not theory, but may be stated as an absolute fact, because a number of dealers who have already gone after their prospects have not only obtained orders, but have delivered tractors during the past month.

Don't get the idea that farmers will not buy tractors or other machinery in 1921. The wise farmer is going to buy every bit of labor-saving equipment he can use to advantage this season. It is the only sensible thing for him to do, and he realizes it even if the dealer does not.

Last spring when high prices for farm crops seemed fairly certain the farmer was justified in either buying a tractor to help produce his crop or in continuing to plug along with his horses—either method seemed pretty certain to bring fair returns. As it turned out, however, it was not as safe as it had seemed, and the men who made the most money last year were those who had produced large crops at minimum cost, partly by covering large acreages and partly by having the work done right and in proper season. Among these men were included practically all tractor owners.

Selling Individual Threshers

But this was not all. The men who obtained the highest prices for their grain were those who had it threshed immediately after harvest and got it on the market before prices went down. It should be unnecessary to add that these men were the ones who owned their own threshers and who had their own tractor to furnish the power to operate it. Thousands of these individual threshing outfits got busy immediately after harvest and in a very little longer time than would have been required by a custom rig, had it been available, these machines had the wheat ready for the elevator. A great many of these outfits paid for themselves last season through the higher price which they enabled their owners to receive for their grain.

These facts are too well known among Canadian farmers to make it necessary for the dealer to spend much time in explaining them to his customers; there are thousands of farmers who saw this condition with their own eyes and who waited long weeks for a custom rig to come and thresh their grain, and who paid high prices for having it threshed, only to get it on the market after the prices had reached bottom, and who then and there vowed that they would not be caught in that predicament again, but that another season would find them owning their own threshing outfit.

Now a threshing outfit includes a tractor. In fact, the tractor is really the most important part of it, for it not only helps thresh the grain after it has been harvested, but it also prepares the seed bed, plants the grain, and helps to harvest the crop for the thresher to thresh. It is not at all likely that these farmers who have made up their minds that they will own a threshing outfit for the harvest of 1921 are going to place their orders now—most of them will doubtless want to wait until they have some idea of the probable condition of their crop at harvest time. However, a large percentage of them have undoubtedly made up their minds to get a tractor this spring in order to help seed their grain and get the work done right and on time, and then order the thresher later on if the crop looks promising. These men are red hot tractor prospects. Undoubtedly a great many who have not reached this decision could be brought to the point by a little judicious talk from the tractor dealer.

The live dealer is going to cash in on this decision, and the sooner he goes after it, and the more energy he displays, the better the results will be.

But I hear some dealers exclaiming, "The farmers say they have no money to buy with; lots of them claim they lost heavily on last year's crop."

Farmers Able to Buy

It is quite true that farmers in general deserve considerable sympathy because of the drop in price of farm products last fall. It is undoubtedly true that a great many of them did not receive enough for their crop to yield a reasonable rate of interest on the paper value of their land, or perhaps even on the price they paid for it. The fact must not be overlooked, however, that most farmers, in figuring the rate of return which they received for their 1920 crop, valued their land in accordance with prices which prevailed for a short time in 1920. This line of figuring or reasoning is not sound. It is true that many farmers could have sold their land at the beginning of 1920 at prices which would have yielded them greater returns if they had sold and placed the money at interest than they obtained by holding the farm and raising crops. This viewpoint, however, is the viewpoint of the speculator. The farmer who bought his land to farm and expected to remain in business for some time could only fairly figure the returns on his land on the basis of the price he paid, or the average value of the land over a period of years.

But regardless of the way they figure out the returns which they received from their crops, most farmers, taking the country as a whole, received enough from their 1920 crops to enable them to buy such machinery as they need for 1921—even the larger machines such as tractors. The dealer who refrains from going after business because he thinks the farmers cannot buy, therefore, is making a serious mistake. Farm machinery represents a very small fraction of the expense of growing crops or operating a farm. A farmer must be in serious financial straits indeed when he cannot afford to buy the tools and equipment he needs to produce crops efficiently.

Then, of course, there is the bugaboo of lower prices which one hears on every hand. Prices of several commodities have declined and many people who are not familiar with the facts of the matter expect prices of farm machinery to follow suit in the immediate future. Neither a farmer nor anyone else wants to buy a machine costing several hundred dollars if by waiting a few weeks or months the same machine can be bought for considerably less money.

There is no question but that many farmers are inclined to put off buying equipment, especially large machines, until they learn whether prices are likely to come down, as they naturally wish to get the machines as cheaply as possible. It is safe to say, however, that any reductions which may occur in the prices of farm implements within the next two or three months will be too slight to justify a farmer in putting off the purchase of machines which he really needs. This statement is based on the fact that the prices of raw materials from which farm implements are made have not yet decreased and show no indication of doing so in the near future—steel and pig iron are in so great demand for other industries which use these commodities in much greater quantities than the farm equipment industry that the prices have shown no tendency whatever to decrease. At the same time the wages paid all the way along the line, from the mines to the finished product, are at practically the highest point they have ever reached, and the increased freight rates have added considerably to the cost of producing and shipping farm implements because of the fact that the increased rates must be paid several times—for example, on the ore from the mines to the smelter, from the smelter to the mills, where the metal is rolled or worked into shape; from the rolling mill to the factory; from the factory to the dealer, to say nothing of the increased freight on limestone, coal, coke, and other materials used in producing and manufacturing steel.

In view of the actual conditions in the farm implement industry, the man who hopes for any material reduction in prices before next summer is certainly doomed to disappointment—the possibilities of such decreases are certainly not enough to justify any farmer in delaying the purchase of machines which he needs for this spring's work, in the hope that he may save a few dollars by so doing, since the loss in time and labor, and perhaps in a decreased crop yield, will most likely more than offset any possible saving through lower prices.

Situation Encouraging

Taken altogether, the present situation which confronts the implement dealer may be very well likened to that which confronted Columbus on his first voyage to America. The sailors and wise men of that day had told weird tales of the dangers which awaited him in distant seas—how the water became boiling hot, how immense sea monsters would swallow his ships, and numerous other inventions of lively imaginations. If the implement dealer to-day listens to all the discouraging talk he hears he is quite likely to form the opinion that it will be almost impossible to sell machinery this spring, especially tractors and other large tools. The men who have actually gone after the business, however, find that, just as in the case of Columbus, the dangers and difficulties exist principally in the imagination of the narrators, and that the business is there for the man who goes after it in the right way.

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Farmers Need Machinery

THE dealers who go after business just now and go after it in an aggressive fashion will surely build up a big business during 1921. It is true that in some sections business is slow in picking up, but it is also true that aggressive men in other sections are selling as many machines as they ever did.

The farmer is faced with the same necessity as in former years of cultivating the soil if he would grow crops. Machines continue to wear out. Young and eager men are starting new farms, the soil of which must be cultivated. A farmer may refuse to buy an expensive car, piano or gramaphone, but he must have machinery.

The only difference between this and previous years is that the dealer must hunt for business. It is there to be had and a system of work, advertising and real salesmanship will achieve the desired results.

Advertising

ONE of the largest credit rating companies in North America made a statement recently to the effect that about 80 per cent. of the business failures in 1920 were non-advertisers. Such a statement is worth pondering. It seems to prove conclusively that in order to continue in business, let alone build up a paying business, the dealer must advertise. Every legitimate means should be employed by the dealer to create public opinion in his favor, to bring his goods to the attention of the real prospects for his line, to create a desire to buy, to bring the prospect to his door, and finally to transform the prospect into a satisfied customer.

Advertising is obtained in many ways, but the best publicity a dealer can receive is the testimony of a satisfied customer. But long before the dealer can cash in on this kind of advertising he has to sell himself, his goods and his service. This is usually done through the local press, the movies, window display, circular letters and descriptive material.

The dealer who hopes to do a paying business this year must advertise. Of course, it is possible for a dealer to increase his sales without advertising if he substitutes an unlimited amount of personal effort, but advertising will make his task easier and will ensure larger returns.

Manufacturers in every line expend a great deal of money each year in national advertising. They would not expend these sums unless it paid to do so.

Certainly it pays, and pays handsomely. It keeps their products constantly before the attention of the public and sooner or later establishes them in a very sound manner, deep down in the public mind.

By national advertising alone the manufacturers do not expect to sell their products. They know that they have to come in personal contact with the buyer, but when they do establish contact the buyer is already perfectly familiar with their products because of the constant national advertising.

Now, if the manufacturers derive benefit from advertising it should also help the dealer. He should line up his own advertising campaign so as to derive the greatest possible benefit from the national advertising.

Persistent advertising, coupled with personal salesmanship, is a need of every business.

No salesman can see more than a few prospects each day. Therefore it is necessary to advertise in order to cover the territory constantly and relieve the dealer of a great deal of personal effort and in some cases to save the expense of extra salesmen.

Not to advertise is equivalent to hiding your store and goods so that it would take a Sherlock Holmes to find them.

Tractor Lubrication

PROPER lubrication is essential to the life of a tractor. There is nothing so vital in the operation of a tractor as lubrication. Without lubrication the tractor would speedily grind itself into junk. Every dealer should be impressed with the importance of this subject and should be able to instruct his tractor owners.

The purpose of a lubricant is to reduce friction and wear of the bearings and other working parts. If a tractor is to give the maximum amount of service it must be handled intelligently. It must have every attention and care required to maintain efficiency.

Only the best kind and the oil suited to the particular tractor should be used. All the tractor manufacturers give a list of the oils which they consider the most suitable for their machine, so the dealer should have no difficulty in selecting a suitable lubricant. The International Harvester Co., in a book on internal combustion engines, gives the following characteristics of a good oil:

1. It must be capable of forming a thin film of oil between the two bearing surfaces.

2. It must be able to withstand the heat to which the working parts which the oil is meant to lubricate are subjected, without burning, decomposing or thinning down too much for lubrication.

3. It must be able to resist being squeezed out from between the moving parts, especially crankshaft and piston pin bearings.

4. It must have low internal frictional qualities. By this is meant the molecules of oil in the film which is under pressure should not generate heat by their rubbing together.

The flash and burning points must be high for cylinder oils, ranging about 421 degrees Fahr. for the flash and 450 degrees for the burning point.

The viscosity factor is very important.

Kerosene or gasoline will dilute lubricating oil rapidly rendering it unsuitable for lubrication purposes unless redistilled. This is important because many persons believe that by simply straining a lubricating oil it can be reused. No oil can be brought back to its normal state except through proper distillation and refining.

Oil must be changed often; on the average for every 100 gallons of kerosene used, and if gasoline is used, for every 200 gallons. After oil is used its structure is broken or destroyed and it gradually loses its lubricating qualities. The difference between oil taken from a crank case after it has been used for some time and fresh oil is readily felt by rubbing between the fingers.

The Columbus Show

THE idea of featuring educational work at the recent tractor show at Columbus was a decided success, says Farm Implement News. Those who have to do with the planning of future shows will undoubtedly profit from this experience. When farmers and dealers gather in a noisy room to listen to four lectures a day at a tractor show it manifests an interest which should be stimulated. Other forms of educational work received attention. One man in charge of a large exhibit told us that the men at the service booth were the busiest of his crew of attendants.

More could be written to show that the educational features were appreciated by visitors. The significant thing is that the dealers and farmers were hunting for power farming information. They wanted to learn how to sell and use tractors in a more efficient manner. The conclusions which may logically be drawn from this experience is that the time has come to gather and make public information regarding the advantages and economies of power farming. It is evident that the future tractor buyer will be a critical purchaser. In many instances he will have to be convinced that he can realize returns which will be commensurate with the investment. No one can deny that he is justified in taking such an attitude. It may require a change in selling methods, but in the last analysis the cloth will have to be cut to fit the customer.

It is casting no reflection on the farmer to say that at present one of the weak links in the power farming program is the lack of a knowledge of how to care for and operate the tractor to the best advantage. In many instances design is ahead of operation. We have only to recall experiences relating to the introduction of other farm equipment to realize that it takes time to educate a generation of competent operators. It is too much to expect to find this country dotted with competent tractor operators when only fifteen years ago the operation of an internal combustion engine was looked upon as a job for an expert. The encouraging thing is that there are a large number of farmers willing to learn. By one means or another this desire for information should be satisfied, while other farmers are brought to realize that the successful use of the tractor depends upon the "know how." There is every reason to believe that fundamental educational work will pay.

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Inventor, Now Power Farming Enthusiast

This is a Story of How Four Brothers Are Inducing the Farmer to "Do It By Machinery"

"OUR chief aim and ambition is to put power farming on the map in our part of the country.

"Each year we see a growing interest among the farmers in modern equipment and methods.

"We feel convinced that there is as big a market for the tractor as there was for the automobile."

It is hardly necessary to state that the speaker who delivered himself of the foregoing is a power enthusiast.

C. Smith and Sons, of Durham, Ontario, is a business that exists for the sole purpose of spreading the gospel of power on the farm. It is another testimony to the fact that the power farming industry is rapidly developing a type of dealer best suited to its needs. A type of dealer of which any industry might well be proud.

C. Smith and Sons have been in the farm machinery business since 1914. Previous to that date the firm conducted for many years a jobbing foundry. It seemed almost inevitable that they should graduate into the farm machinery business, for, while carrying on the foundry, one of the sons, David, the eldest, was tinkering away at inventions and evolving all kinds of things.

His masterpiece was a threshing machine, which the firm built and shipped out West. The machine proved to be a good one and stood up well to its work. Owing to the fact, though, that David Smith broke down in health and was for a long time unable to attend to his duties, after a few were sold the machine was allowed to go off the market. Mr. Smith's prolonged illness and the difficulty of providing repair parts and servicing the thresher were the prime factors in withdrawing the machine from the market.

Inventive Genius

If there is a microbe that spreads the "disease" of inventiveness it has been very active in the Smith family. They all have it pretty bad, and judging by the devices and euipmentq in the workroom hundreds of microbes must be consumed periodically.

A large percentage of the machinery and tools used in the Smith garage has been home-designed and home-made.

The Premises

Their premises are very large and even now are in course of being remodelled. The old foundry building has been utilized and when the alterations are completed Durham will be proud of a very fine and well equipped garage and service centre.

This picture shows C. Smith & Sons' Sub-Agency at Mount Forest.

Smith's Garage at Durham, when alterations are complete, will be modern in every respect.

The garage is a long two-story building with the show room, office and accessory department at the front. The space at the back of the showroom and office is occupied by the battery department, stockroom, car and tractor storage and workshop. There are two separate buildings, one for overflow car storage, and the other for oils. Gasoline is stored in an underground tank with a capacity of 21,000 gallons. The second floor is 110 x 30 feet and will be used, when the alterations are completed, for a paint shop and for storing new cars, tractors and other machinery.

A Rest Room

The showroom has an all glass front and includes a rest room for ladies. This rest room is furnished and has every convenience.

It is unnecessary to enumerate all the details of the equipment, suffice it to say that it is complete and capable of taking care of every operation in automobile and tractor repair.

Sub-Agencies

C. Smith & Sons have a very large territory and in order to give adequate service at all points have opened sub-agencies at Mount Forest and Holstein. The Mount Forest branch is in charge of two of the brothers, George and Lorne. David is head of the concern—the father being dead—and manages the Durham business, while James is in charge of the repair and service departments. There are the four brothers, all actively engaged in the business and all enthusiastic boosters for power farming. Besides the four brothers, four mechanics and salesmen are kept all the year round, and in the busy season this number is increased.

"When we started to sell farm machinery," said David Smith, "we sold everything that the farmer uses, but of late we have been concentrating our energies on power machinery.

"Our main lines are automobiles, trucks, tractors, threshing machines, farm lighting, power washers, engines and dairy equipment. We will, of course, undertake to supply a farmer with any other machine or implement he requires, but we like to concentrate on power machines.

How They Get Business

"It has been our policy always to keep in personal touch with the farmer, believing it pays to do so. We have salesmen out in the territory all the time, during winter, spring, summer and fall.

"We have found tractor demonstrations very beneficial. At Mount Forest and Holstein we staged demonstrations right on the farm doing real work, and got a large number of prospects as a direct result.

"Lighting plants are also demonstrated, especially during the summer months. We have a demonstrating truck fitted up for this purpose and give demonstrations on the farms and at garden parties.

"Power farming is coming into its own. I am convinced that in a few years' time practically every farmer will be using power machinery extensively; but at the same time I am also convinced that the individual dealer must demonstrate and advertise to bring about that happy condition of affairs.

"Nominally, our terms are cash and we buy everything for cash.

"We have one price for everybody and favor nobody. After we make a sale all the details could be published in the papers without causing any of our customers to get angry or dissatisfied. This is only possible by adhering strictly to a policy of "one price for everybody."

Service

"We believe in giving a service complete enough to satisfy our customers. Our service system is comprehensive and sufficient to look after every requirement. Spare parts for every machine we handle are kept in stock **all the year round.** We also have samples of all our machines in stock, assembled and ready at a minute's notice to give a demonstration. We believe that is important. Very few men can be induced to buy from a catalogue; they like to see the actual machine, and, if possible, see it in operation.

"Promises which we know are impossible to fulfil are never made by us. Nor do we allow our salesmen to make sweeping promises. But once a promise is made we keep it to the letter.

"After all is said and done a customer wants to be satisfied and the policy that succeeds in this is the policy par excellence for the dealer."

Extensive Advertising

C. Smith and Sons advertise very extensively; in the local press, through the medium of the local movies, by circular letter and descriptive literature.

We might close by saying their office is well equipped and a complete bookkeeping system installed in charge of a capable young lady.

Farm Products and Implement Prices

With the Decline in the Price of Farm Products Farmers Generally Are Looking for a Similar Decline in Implement Prices—So Far There is no Evidence of Such a Decline and it is the Dealer's Duty to Tell the Farmer Why

By J. W. KOTTMEIER

WHILE we realize that the Canadian farmer has suffered through declines in prices, he must know that many other businesses have suffered as much or more. He must realize that many men are out of work because of the slowing-up of business, and that his problems in the readjustment period are no more serious than those of others. **While the farmer is to-day facing radical shrinkage in the prices of his products, his psychology is affected as much by what he might have made on this year's crop had prices not declined as by the actual loss that he sustains.**

It must be remembered that a considerable percentage of the farm food crop production is consumed right on the farm and that the immediate shrinkage in price applies only to those products which are marketed in their raw state.

Wheat, even to-day, is selling for twice the price that it did in July, 1914, when the war broke out. In the four years preceding the war, according to the Dominion Bureau of Statistics, the average price per bushel of wheat was sixty-seven cents; to-day wheat is selling at $1.85. Of course, the farmer's costs have increased considerably in the last few years, but this is more than offset by the increase in the prices he can get for his crops and the fact that 1920 was a phenomenal year in crop production.

The outstanding facts are that, irrespective entirely of the money value of the 1920 crop, Nature has provided amply to feed and clothe our people during the current year, which, after all, is the greatest factor to be considered.

If the farmer could live in our cities now and witness the suffering that occurs through lack of employment, the actual shortage of food and clothing with which the families of some of our workmen are now contending he would view his own conditions with less alarm and conclude that in this time of readjustment he is being dealt with less harshly than many others.

Cost of Raising Farm Products

There seems to be a great deal of discussion of the tremendous loss that farmers are meeting with in the cost of raising farm products. Adding together the farmer's wages, interest upon investment and profits, he has less than he has had before, but he has still a considerable margin to work on. And while the farmer may have to write down the value of his farm to some extent, in keeping with the drop in his gross returns, this is not as great as in some other lines.

If you will examine the stock market you will find that the earnings in industry have been so reduced that the holders of the stock, which represents the plant of industry, have been compelled to write down this plant value even more seriously than the farmer will have to do.

In the computation of cost the farmer's cost accounting system generally fails to take into consideration the value of the living for himself and family secured from the farm. It is usually assumed that the work of the wife and the children under fifteen years of age, which is not counted as a part of the cost, offsets the value of this living. When one considers that the workman in the city, in the majority of cases, feels himself fortunate if as a result of the entire proceeds of his labor he is able adequately to support his family, we can hardly reconcile the usual system of farm accounting. There certainly should be taken into account in any system of farm accounting the very considerable asset secured in the way of the living of the family on the farm. If farm accounting is conducted upon the basis of commercial accounting in other fields of activity, the farmer will find that, even at present prices, he is getting a good substantial return upon the fair value of his investment.

Value of Farmer's Efforts

The value of the farmer's efforts to the community is highly appreciated. The prosperity of the farm classes is absolutely essential to the prosperity of our people as a whole, but in this day, when right thinking means so much and wrong thinking is such a harmful influence, it is important that the real facts should be known and understood. He who influences the farmer's mind by preaching the wrong doctrine, by distorting the facts, is accomplishing great evil.

Implement Prices

With the decline in the prices of farm products, boots, shoes and other commodities which had very great advances during the war, the farmer has been expecting some immediate relief in the prices of implements. He fails to recognize the fact that while many commodities—his own products among the number—advanced two or three hundred per cent. over pre-war prices, implements, upon the average, never advanced more than ninety-two per cent., excluding heavy machinery, and seventy-eight per cent. if heavy machinery is included, and are to-day upon that basis of price.

JNO. W. KOTTMEIER
Sales Manager, John Deere Mfg. Co., Ltd.

An analysis of the average increase in the price of the leading farm products over July, 1914, will reveal that at the present market, they show as high a percentage of increase as do farm implements; the implement industry, never having taken advantage of the opportunity to inflate its prices, is now in a position where it cannot decrease them, without substantial loss, until the cost of the products of which implements are made is reduced. Instead of reduction the last twelve months have shown a substantial advance, so that to-day's costs of implements are higher than ever before.

To meet increased cost of materials further advances in implement prices of from ten to fifteen per cent. were necessary, but were not made by manufacturers because of the rapid decline in crop values. In refraining from making these advances the implement manufacturers have taken a considerable share of the burden of readjustment and in general are facing very little, if any, profit on this year's operations, and in some cases substantial loss.

Judge Gary, of the U. S. Steel Corporation, has recently announced that there will be no reductions in the price of steel. As this is the basic product from which implements are made, there is no prospect for any relief in implement costs until steel, iron and labor go down.

It does not seem possible that there will be any material reductions in labor in the steel industry until next summer or fall, and even after this has occurred it will take some little time before this reduction is reflected in finished costs. It will therefore probably be the spring of 1922 before any material relief in the costs of implements is possible.

It has been the history after past wars that the deflation of labor is a very slow process. It will probably require some length of time to accomplish similar results after the war that has just passed.

We, therefore, must recognize the fact that this readjustment is going to be a "continuus performance" for some years to come; that when we get down to the point where reductions in price can only be made by reductions in labor, when we consider the labor increases that have occurred in the transportation field, which will be particularly slow in readjustment, and the effect of the increased cost of transportation on the cost of finished products, we might as well get used to a long pull in this field of readjustment.

Effect of Freight Rates

It has been estimated that the effect of the increased cost of transportation alone, provided that present freight, express and passenger rates maintain, and in the event of the elimination of all other deflation, would still leave the new schedule of prices of commodities, whenever they may be accomplished, approximately twenty per cent. higher than the pre-war level.

It is therefore a time for calm thinking, sane judgment and careful operation, but it is not the time for radical action, loose talk or socialistic methods. The fact that this readjustment is going to require a considerable time does not mean that business cannot go on with a reasonable degree of prosperity. It does mean, however, that the great profits of the past are not to continue; that returns cannot be made upon inflated values; that to maintain this prosperity and achieve individual success, careful thought, hard work, perseverance and industry are the only qualities that will win.

Flax Deseeding and Cleaning Machine

A NEW flax deseeding and cleaning machine for deseeding flax without injury to the straw has successfully passed most rigid tests this winter upon some of the best fibre flax crops in Ontario. The tests were conducted by R. J. Hutchinson, chief of the Fibre Division, Central Experimental Farm, Ottawa. He reports officially that on 6th January he assisted at a demonstration of the machine, which was then deseeding a crop of good ordinary fibre flax at Ripley, Ontario, when despite most unfavorable weather conditions, the machine ran steadily and did most excellent work.

A special trial for capacity was carried out, and on a steady run of four hours the average weight of straw passed through the machine was equivalent to two tons per hour—less than capacity, but equal to the possibilities of feeding.

On a thorough examination of all materials, after delivery by the machine during the test run, Mr. Hutchinson reports that the seed bolls had been thoroughly separated from the straw, and well cleaned, the flax straw thoroughly freed from chaff and seed and delivered in a perfect sheaf, and that the chaff blown off contained no flax seed.

Pulling the mowers is only one of the many jobs the International will do. All through the year there is work for a tractor on every farm in Eastern Canada.

The International agents are face to face with another farming season. They will go on distributing the machines of this Company throughout Canada.

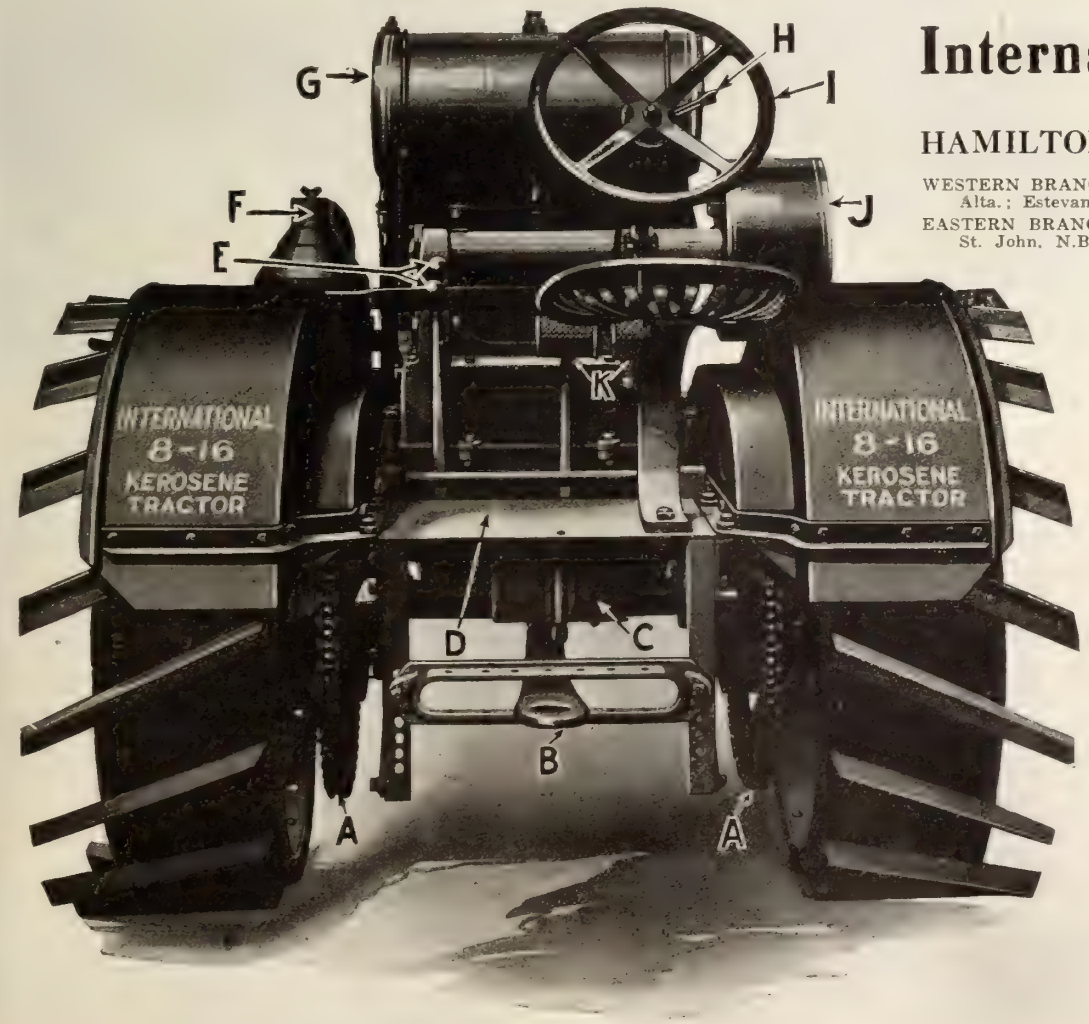
An International 8-16 will help make the best of good hay weather. Loaded high with the loader, then to the mow on high.

THE **International 8-16 Kerosene Tractor** is a tractor that makes a special appeal to prospects from every point of view. The first impression is the graceful, trim design, the general compactness and the good balance of the tractor, with just the right distribution of weight on the front trucks and drive wheels. The next thing that strikes the prospective owner is the absence of exposed working parts; everything is enclosed as protection against the grinding action of dust and dirt.

And he will be impressed by the flexible range of the drawbar, making it possible to pull a harrow, plow, binder, or wagon with equal advantage and by the convenient pulley so placed that the tractor can be backed into the belt in a hurry, with no chance for the belt to drag on the ground or rub against any part of the tractor.

Coming down now to more technical but nevertheless very important details—there is the throttle governor that regulates the fuel to the load; removable cylinder sleeves in the engine so that if a cylinder should become scored through the use of poor lubricating oil, for instance, a new lining can be put in at once, renewing the cylinder; centralized auto-type control, making this tractor as easy to handle as an automobile.

There are other desirable characteristics of the **International 8-16 Kerosene Tractor,** as every agent and owner knows. Canada is full of "tractor business," waiting for the enterprising agent—and he who wants to sell International 8-16 tractors will find many sales awaiting him on his territory. This is the year to go out after business. Ask us for all available assistance.



Note the convenient arrangement of the levers, steering wheel, etc. Both rear wheels are drivers. A, strong, durable drive chains; B, quickly adjustable drawbar; C, tool box; D, platform; E, handy gear shift levers; F, water air cleaner that keeps dust and dirt out of the cylinders; G, fuel tank that is easy to fill; H, spark and fuel control levers; I, steering wheel; J, efficient belt pulley; K, brake and clutch pedals.

International Harvester Co.
of Canada, Limited

HAMILTON :-: CANADA

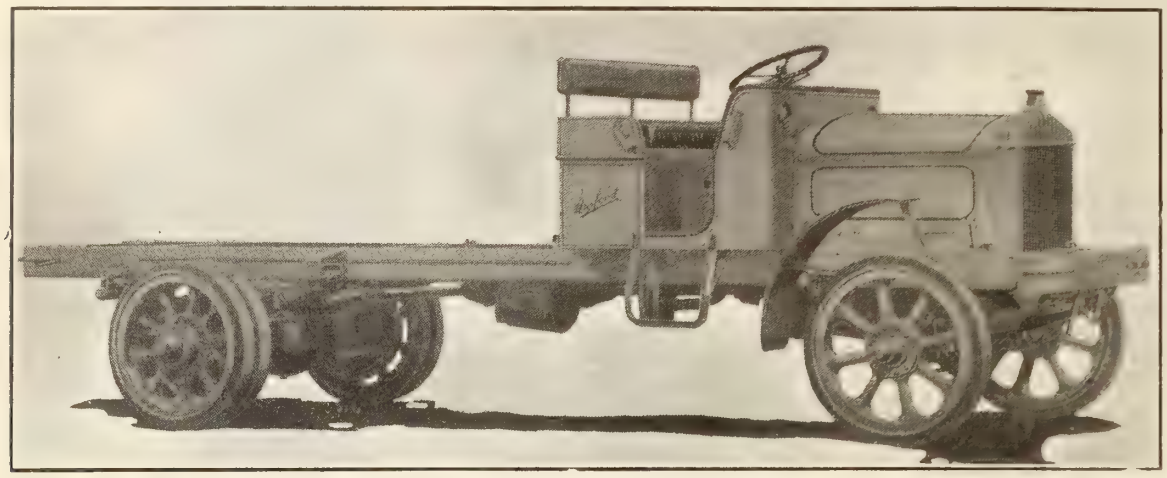
WESTERN BRANCHES—Brandon, Winnipeg, Man.; Calgary, Edmonton, Lethbridge, Alta.; Estevan, N. Battleford, Regina, Saskatoon, Yorkton, Sask.

EASTERN BRANCHES—Hamilton, London, Ottawa, Ont.; Montreal, Quebec, Que.; St. John, N.B.

This is the kind of work that proves the value of throttle governors. First, a big load, then no load at all. The governor on the International regulates the fuel to the load.

The Garford Five-Ton Truck

THE Garford Motor Truck Company, of Lima, Ohio, have recently placed on the market a new 5-ton truck, which, they state, has been developed to handle the big jobs of heavy hauling and



The New Garford 5-Ton Truck.

to withstand the strain and stress of hard going under heavy loads.

It has a 10,000 pounds capacity and has an S.A.E. rating of 40 h.p.

The engine is four-cylinder block cast, detachable L head type, three-point suspension, with 5-inch bore and 6½-inch stroke. The crankcase is in two separate castings; the upper half supports the bearings, shafts, gears and cylinder block and also encases the upper portion of the flywheel; the lower half forms the oil reservoir only and is easily removable without disturbing bearings, gears or other parts.

The valve mechanism is of simple design; the pushrods are of mushroom type, hardened and ground to close fit. All valve parts are fully enclosed.

Other specifications briefly are as follows:

Ignition—High-tension magneto with one set of spark plugs; magneto advance controlled from lever on steering column; switch on dash.

Carburetor—Automatic float feed, located on right side of engine.

Governor—Centrifugal type attached direct to intake pipe.

Lubrication—Force feed oil system; gear driven, gear pump delivering oil through passages to the crank shaft bearings. Connecting rod bearings fed through drilled passage in crank shaft from main bearings, oil is also delivered to timing gear compartment. A pressure relief valve in line between the pump and bearings is used to maintain uniform pressure. A bayonet type oil level indicator is used to indicate the quantity of oil in the crank case; a pressure indicator used on dash board to show pump operation.

Cooling—Water circulated by direct driven centrifugal pump; water passages very liberally proportioned.

Transmission—Four-speed selective sliding gear type, all gears and shafts nickel steel, properly heat-treated. Transmission mounted on two cross members in center of chassis. Three-point suspension.

Clutch—Multiple dry disc type inclosed in housing attached to crankcase. Covered hand hole is provided for inspection and adjustment.

Universal Joints—Two complete sets—4 joints, all-steel pattern, grease-tight and dust-proof; all working parts heat-treated. A long slip sleeve is provided on one joint of each set.

Final Drive—Worm and worm gear through full-floating axle shafts.

Brakes—Two complete sets operating independently on rear wheels; foot pedal and hand lever for brake control, standard location.

Springs—Semi-elliptic front and rear. High-grade alloy steel throughout.

Control—Foot accelerator; spark and throttle levers on steering column, brake and gear shift levers in center of chassis. Clutch and foot brake pedals in standard location. Magneto switch on dash.

Frame—Pressed steel, channel section hot-riveted, reinforced with gussets and cross members.

Steering—Screw and nut type irreversible, mounted on left side; twenty-two inch notched hand wheel.

Front Axle—"I" beam section, drop-forged in one piece, heat-treated steel.

Rear Axle—Latest type worm drive; worm of hardened steel, mating with a bronze gear; bevel type construction extending from wheel to wheel. Spring seats separate, no truss rods required.

Wheels—Metal, S. A. E. standard for solid tires, very heavy construction. Both front and rear mounted on roller bearings.

Wheelbase—Standard 162 in. Length of frame back of driver's seat, standard chassis, 150 in.

Tread—Center to center of wheels. Front—68½ in. Rear—69¾ in.

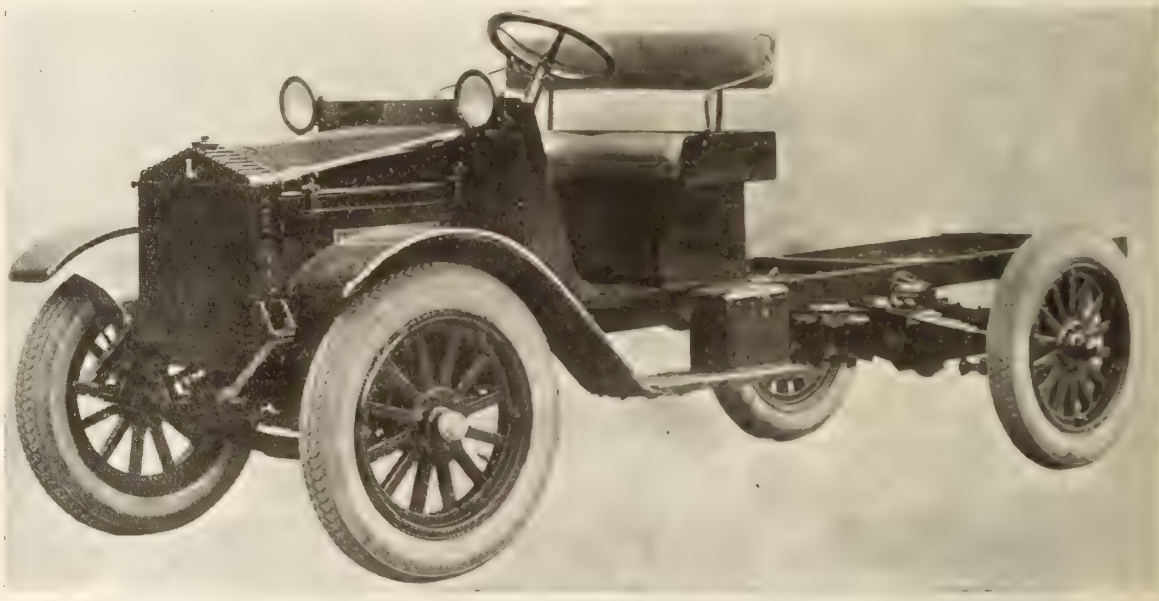
Tires—Front—36 in. x 6 in. solid. Rear—40 in. x 6 in. dual solid.

The Luedinghaus Adds One-Ton Truck

THE Luedinghaus-Espenschied Wagon Co., of St. Louis, have added to their line a one-ton truck which they claim meets the need for a truck of light weight, designed to stand heavy duty service and capable of maintaining an average speed of thirty miles an hour.

It is electrically equipped in every detail, including electric starter, and with electric lights in front and rear. Pneumatic tires are standard equipment.

Some of the specifications are as follows:



The Luedinghaus One-Ton Truck Is Equipped With Pneumatics.

Motor.—Four cylinder, ½ inch bore x 5 inch stroke.

Radiator.—Built up type. Large copper core, with vertical copper tubes supported at right angles and vertically by copper honeycomb fins. Metal housing made of four distinct castings.

Clutch.—Borg & Beck 10 inch. Dry plate disc, non-slipping, easily adjusted.

Transmission.—Grant Lees. Built in unit with motor. Gears and shaft of nickel steel, heat treated. 3 speeds forward and one reverse.

Frame.—Channel steel, heat treated, 4 inch section.

Front Axle.—Heavy drop forging, I-beam, Timken roller bearings.

Rear Axle.—Worm drive. Special speed wagon type axle.

Brakes.—2 expanding brakes. Very efficient.

Steering Gear.—Worm and nut type of adjustment, 18 inch hand wheel.

Springs.—Electric furnace alloy steel, with bronze bushing. Front 2¼ x 40 in., rear 2½ x 50 in.

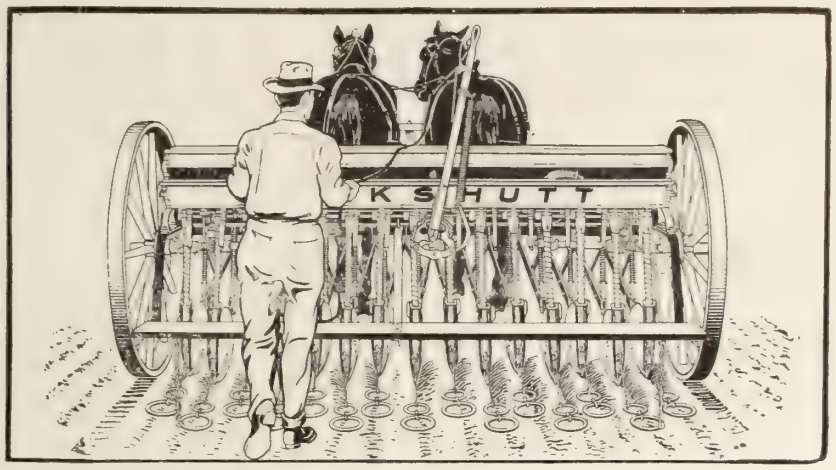
Wheels.—Artillery type. Second growth hickory, 12 spokes front and 14 rear.

Tires.—Pneumatic cord, 35 x 5 front, 35 x 5 rear.

A Mower Attachment for Cletracs.
For description see page 32

Cockshutt Disc Drills

Regular Grain Drills and Combined Grain and Fertilizer types



Supplied with either Single Discs or Hoes

Superior construction guarantees rapid, easy, correct seeding

The heavy sales of Cockshutt Disc Drills show that the up-to-date farmer realizes that only the best is good enough for such an important work as seeding. A Seed Drill must have a big margin of strength and reliability so as not to "fall down" at a critical time. You will make staunch friends of your customers by supplying them with these machines.

Seeding time is often short and field conditions many times far from ideal. So the Cockshutt Drill is built strong, but it is also built for speed. Its light draft makes for rapid work in any kind of soil, rough or well tilled, hilly or level. The Discs or Hoes open a channel wide enough for even planting, the shoes are non-clogging and plant the seed at uniform depth. Trash or pebbles do not lodge in the discs—they are specially constructed to avoid this. The feed is positive and simple. Doesn't get out of order—doesn't crack or bruise the seed—sows any quantity desired.

Combined grain and fertilizer Drills are becoming more popular each year—as the value of commercial fertilizer is becoming better known. The Cockshutt No. 5 Fertilizer Drill has become a pronounced favorite wherever used. There will be a brisk demand for them this spring—so get your orders in early.

Cockshutt No. 2 Drills are built in 12, 13 and 15 sizes with 6″ spacing.

Cockshutt No. 4 Drills with either Single Discs or Hoes in 11 and 13 sizes with 7″ spacing.

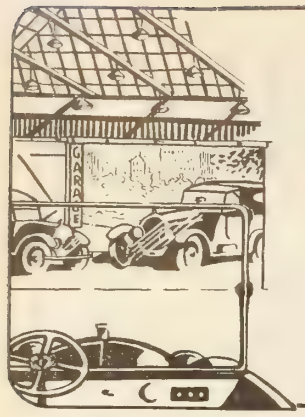
Cockshutt No. 5 Grain and Fertilizer Drills in 9, 11 and 13 sizes and fitted with Single Discs or Hoes with 7″ spacing.

Extensive advertising is creating a demand for Cockshutt Drills that you should cash in on. Will be glad to send you a supply of special literature on these machines. Write us to-day.

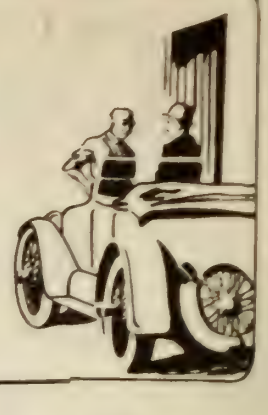
Cockshutt Plow Co., Limited
Brantford, Ontario
Winnipeg, Regina, Saskatoon, Calgary, Edmonton

Sold in Eastern Ontario, Quebec and Maritime Provinces by

The Frost & Wood Co., Ltd.
Smiths Falls, Ontario
Montreal, Que.; St. John, N.B.



SHOP NOTES FOR THE GARAGE MAN



Useful Hints for the Repairman

UNDERCURING of sectional repairs can often be traced to the molds. If the molds are clogged with dirt, or if air pockets are allowed to form in the molds, it takes longer to heat them and consequently longer to cure the repair.

Water collects in the molds occasionally stopping circulation, with the result that while the steam pressure may be correct, the temperature of the molds will be too low to accomplish the cure in the prescribed time. All vulcanizing plants should be equipped with a thermometer.

At least once a month the steam pipe should be disconnected and a strong pressure of steam or air should be blown through the molds. A surprising amount of dirt and water will be dislodged by this process. There will be comparatively little trouble from this source if your molds have a drain at the lowest point, where water is likely to collect and a pet cock at the highest point in molds to let trapped air escape.

Small cuts and fabric breaks in motorcycle tires can be cured on the hot plate.

It is very important to know the relative degrees of temperature to pounds of steam. The following table gives this information:

Temp. F.	Lbs. Steam Pressure	Temp. F	Lbs. Steam Pressure
227.2	5	280.6	35
239.4	10	286.7	40
249.8	15	292.4	45
258.8	20	297.7	50
266.8	25	302.6	55
274.0	30	307.2	60

This table applies to sea level or near sea level and will not hold true in extreme altitudes and climates. In such cases it is well to revise the table with the use of a thermometer so that you can be sure of getting the required temperature with the designated steam pressure. One can quite readily understand that molds directly above the boiler will be of higher temperature per steam pounds than were the molds set up alongside of the boiler.

All metal surfaces that come in contact with raw gum during the cure should be kept highly polished and perfectly clean. Molds, bead plates and cores may be cleaned as follows:

First, polish with fine emery cloth or steel wool, preferably steel wool, as it does not scratch the surface. Then apply a solution of soap and water, soft soap, sulphur or beeswax.

Make test cures of raw gum and fabric at least once a week. It has been brought to the attention of the writer that many repair men never build up and cure a test section, but the more successful test men do test their cures and gain knowledge by so doing.

A good method of testing rubber for cure is to cut a narrow strip about ⅛ in. wide in the edge of the piece to be tested. By pulling this the elasticity and "set" can be determined. A well cured stock should be elastic and lively, and the strip should return to very nearly its original length.

When raw gums do not flow properly it is a pretty sure sign that there was insufficient pressure on the inside of the casing.

Unless an air bag is so constructed that it will stretch and force the casing out against the mold and bead plates when inflated, invariably porous cures will be the result, even though the outside appearance of the cure be perfect at the time it is taken out of mold. Test expansion of different makes of air bags by inflating them. Note increased circumference. Length of air bag to be used should be determined by length of sectional mold. Some molds require 16 in., while others are sufficiently long for 18 in. bags. Do not use an air bag as a building form. If the bag is not large enough to fill out casing properly it should be padded with strips of old fabric until it fits properly.

Every precaution should be taken that fabric in casing is absolutely dry before the repair is proceeded with. Fabric separation will result from failure to heed this warning. An inside patch vulcanizer will serve as an excellent drier. Temperature should not exceed 150 degrees F. in drying. If extensive repairs are made on casing with separated fabric the heat during the cure will expand the air between the plies and increase the separation.

When the tire has been placed in the mold do not screw down clamps tightly until air bag has been partially inflated. Extra precautions should be taken when curing straight side casing in order to avoid fabric buckles and shoulder cracks.

REPAIRING TREAD CUTS

WHEN tread cuts appear they should be repaired at once so that sand and moisture will not work into the tire and cause separation.

The repairman can get considerable business and at the same time be performing a real service by a policy of looking over a customer's tires whenever the opportunity occurs and advising him about their condition. A special watch should be kept for tread cuts for the reason mentioned above.

In making a repair of a tread cut the repairman should bevel out the injury down to the carcass, so that it is free and open. It should then be buffed thoroughly and cleaned with a cloth moistened with solvent and cemented. When thoroughly dry, fill injury with layers of tread gum, depending on the color of the rubber in the tread of the tire.

The injury should be built up higher than the original tread. The original tread pattern is then cut into the raw stock.

In repairing the tread cut it is essential that the fabric directly under the cut is free from foreign matter, such as dirt and moisture.

If, on examination, it is found that the fabric is water-soaked and full of dirt, remove the first layer of fabric on the outside in the form of a small square patch. In building up this should be covered with cushion gum. Place a piece of rebuilding fabric larger than the piece taken out in the square made above. The cushion gum should then be placed over the ply placed in position.

The cut of the tread is then filled in the same manner as described above.

When mud boils or sand blisters occur cut the part open and remove all of the loose rubber from the carcass and buff thoroughly.

When more than one ply is removed the plies should be stepped down 1 in. Next replace with rebuilding fabric, allowing ⅛ in. lap on the under plies and ¾ in. lap on the last ply.

An inside liner should then be placed, extending from toe to toe of the bead of approximately 1 in. more in width than the largest ply of the new fabric replaced on the outside. Finally, fill in the cut on the outside, dust with soapstone, and cure.

GARAGEMEN'S COMMANDMENTS

THOU shalt not talk of any other garageman before me.

2. Thou shalt not expect the garageman to keep his place open till the cock crows in the rosy morn, so that thy machine will be safe from storm and thieves, without giving him a piece of money.

3. Thou shalt not expect the garageman to perform miracles with thy machine when thou hast failed to put oil in thy machine since last summer.

4. Thou shalt not tinker with the carburetor, nor with the magneto of thine automobile, lest thy days of pleasure on earth be few.

5. Thou shalt not take thy machine to the blacksmith for repairs, for verily I say unto you, the blacksmith straightway sends for the garageman to make the needed repairs and thy bill is increased twofold.

6. Thou shalt not, when thou wouldst buy an automobile, go like a thief in the night to cities afar off in order that thou mayest save a few pieces of silver, for surely the publican of the city will see thee coming.

7. Thou shalt not, after the garageman has arisen from his bed at 2 a.m. to repair thy broken-down machine, which thou didst buy as a bargain at half price, deny, and refuse to pay thy bill, because there is a place where the worm dieth not, and peradventure you may find it.

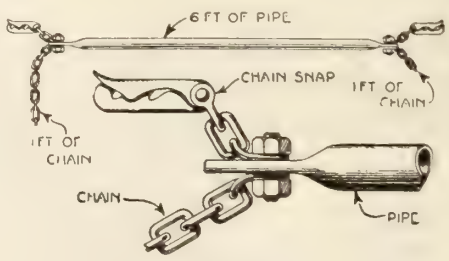
8. Thou shalt not get wroth and curse the tire maker in thy wrath if thy tire explodes with a loud report because thou didst prefer an habitual forty pounds pressure, whereas thou shouldst have had eighty pounds.

9. Thou shalt not tell the garageman that thou didst not change the adjustments of the machine which thou didst buy of him, in order that thou mayest get him to work for thee for nothing, lest he smite thee in his wrath.

10. Thou shalt not covet the garageman's job, for verily his days are long and full of trouble, nor shalt thou covet his petrol, nor his oil, nor his grease, nor the labor of his mechanics, nor anything that is the garageman's unless thou dost intend to pay for it. —Garageman.

A Rigid Tow-Bar

INVARIABLY when an automobile has broken down in the streets or on the road, the owner of a small garage will send the first available car, equipped with a piece of rope or tire chain that he may have on hand, to the scene of the breakdown to tow in the derelict. The driver of the tow-



ing-car has frequently an exciting time, especially when it is necessary for him to drag the broken-down car through city streets with much traffic. When he is compelled to make a sudden stop the towed car will often run into the rear end of the pilot and both cars are damaged.

All this can be avoided if the owner of the garage were provided with a rigid tow-bar for dragging the disabled vehicle through the streets. A rigid bar is by far the best means, as it keeps the two cars at a fixed distance from each other. Regardless of the conditions of the brakes of the disabled car, it will come to a stop when the towing-car stops.

In the accompanying illustration a tow-bar is shown which can be made from a 6-ft. section of 1-in. wrought-iron pipe, 2 short pieces of chain, 2 bolts, and 2 tire-chain snaps. The pipe is flattened at each end, and chains and snaps are attached by bolts through drilled holes in the flattened ends. If no iron pipe is available, a correspondingly heavier wooden bar may be used to the ends of which the chains and harness hooks are attached.—Popular Science.

MIRACLE BLOWOUT PATCH

THIS patch is made of rawhide covered with rubberized fabric. Two flaps which tighten over the beads hold the patch in place. Perforations in the flaps allow the patch to be tied in position to simplify the adjustment. After a few miles' service, the patch is said to slightly vulcanize itself to the shoe. The patches are packed in attractive containers. Rawhide Products Corp.

"WILKIE" PISTON RINGS

A little over a vear ago we decided to enter into the field of Piston Ring manufacturing with the object in view of making Piston Rings that would be equally as creditable to us as our other products.

We secured the services of men skilled in the art of Piston Ring manufacturing, and who regard the production of the perfect "Wilkie" Ring as a scientific achievement ranking with the most outstanding developments in the automotive industry.

In the short time we have been engaged in this line, some of the largest manufacturers and jobbing houses in Canada, appreciating the quality of our product, are to-day our best customers and "boosters."

If you have experienced trouble in getting guaranteed, uniform, properly-made Piston Rings, drop us a line and save yourself further worry, and increase your list of satisfied customers.

Discounts given to recognized jobbers only.

Made in Canada by

Windsor Machine & Tool Works

312-318 Pitt Street West WINDSOR, ONTARIO

Selling the Farmer Clean Land

Every good farmer aims to keep his land free from noxious, crop-destroying weeds. Harrowing and cultivating stops growth of weeds, but doesn't kill them. As soon as cultivation is discontinued weeds flourish.

Sell the farmer what he needs to keep his fields clean—the **Weed Harvester.** It gathers the weeds up after cultivation has loosened them, rolls them up free of earth and ready to be burned. Weed Harvesters have been used successfully for twenty years in England and France, and for several years in some parts of Ontario. No other means has been discovered to deal so effectively with "quack" or "twitch" grass. It will take wild mustard out of growing grain when the grain is 3 or 4 inches out of ground. In addition it produces a fine seed bed, well-worked up and mellow. The Weed Harvester is a series of links of electrically-welded square bar iron held together with bars, and is 11 feet long and 8 feet wide, for four-horse or tractor hitch.

WEED HARVESTER

Ask us to prove to you why you should be able to sell every farmer a WEED HARVESTER whether his farm is "weedy" or not.

THE WEED HARVESTER MACHINE CO., Limited
BELLEVILLE, ONTARIO

We Have a Large and Well-Assorted Stock

of

Dreadnaught and Imperial Tire Chains

Hart Storage Batteries

Veedol Oils and Greases

Raybestos Brake Lining

MacBeth-Patterson and Primolite Lenses

KEYES SUPPLY CO., Limited

Wholesale Automotive Equipment

OTTAWA, ONT.

WHOLESALE ONLY

Our 1921 Catalogue will be ready for distribution on or about March 1st, 1921.

CANADA'S AGRICULTURAL IMPLEMENT INDUSTRY

SPECIAL interest attaches to the figures compiled by the Dominion Bureau of Statistics in connection with the agricultural implement industry in view of the prominence given to this industry, especially in the West, during the tariff inquiry. The importance of this particular branch of manufacturing and what it means to Canada may be gauged by the fact that the capital invested in its 86 plants amounted in 1919 to $83,276,450, or close on to a million dollars in each establishment. Dependent on the industry for their livelihood were 10,242 male and 566 female workers, whose combined salaries and wages aggregated $11,858,013. Assuming that an average of three persons were dependent on each male worker, the total number of people associated directly and indirectly with the industry would fall little short of 50,000, or the population of a fair-sized city.

An analysis of the wages earned showed that the majority of the workers earned over $20 a week. Only 837 male workers were drawing under $15 a week, and of these 112 were boys under sixteen years of age. Two thousand two hundred and forty-six male workers were reported as earning from $15 to under $20 a week, while 6,219 earned from $20 up.

The quantity and value of all materials delivered at the works was $16,250,146, and some idea of the large quantities used may be obtained from the information that 65,843 tons of steel and steel castings; 40,055 tons of iron and iron castings; 20,769 tons of malleable iron and 42,986 in feet of lumber and timber were utilized.

Turning to the output of the industry, a long list of products is supplied. Chief among these were 83,746 harrows, 70,372 plows, 41,149 cultivators, 29,949 harvesters, 28,019 mowers, 27,912 drills, and 15,375 hay rakes. The selling value of the various products was $36,703,943.

That the industry is not making heavy profits may be demonstrated by deducting the listed expenses from the selling price of the output. This works out at $4,989,696. On the capital invested this is approximately 6 per cent.—Industrial Canada.

MONTREAL MOTORISTS' LEAGUE

PRESIDENT J. D. CHESNEY, of the Montreal Motorists' League, announces that T. C. Kirby has returned from the management of the 1921 National Motor Show of Western Ontario, held recently at London, to resume his official position with the Montreal Motorists League as secretary-treasurer. The directors are out for a 5,000 membership during the coming year and present prospects are that this number will be easily reached

Local motorists can obtain their car and driving licenses any time on and after March 1st at the offices and headquarters of the Montreal Motorists' League in the Windsor Hotel. The officials of the League have engaged an extra office staff specially for the detail work in connection with the issue of the new 1921 licenses and this convenience will be appreciated by motorists as it avoids the tiresome waiting endured at license offices in past years.

WINNIPEG HAS NEW MAMMOTH GARAGE

THE Dominion Motor Car Co., Winnipeg, opened recently what is claimed to be the largest garage in Western Canada. The new building, which was built at a cost of $150,000, is situated in the heart of Winnipeg, at the corner of Fort and Graham streets. It is three stories high, stretches back 120 feet on Graham street and occupies a frontage on Fort street of 100 feet. The showroom, which extends the entire width of the building on the ground floor, facing Fort street, is finished and decorated in the most up-to-date manner and affords ample accommodation for the general offices, selling staff and clerical force. Glass partitions divide the offices and supply them with ample daylight. The building is so constructed that the maximum amount of daylight is secured throughout.

A repair room for light repairs and storage department, situated at the back of the showroom, occupy a space of 100 x 90 feet. On the second floor is the stock room and repair shop proper. This repair shop is fitted with modern equipment to take care of both heavy and light repairs. The third floor is used for new car storage. The building is constructed of reinforced concrete and the exterior on the street fronts is faced with tapestry brick and trimmed with enameled brick and cut stone. It is heated by low-pressure direct steam, the windows are automatically controlled and the lighting is regulated by a time clock.

TRACTORS CARRY ORE OVER THE SNOW

FROM Prince Rupert, British Columbia, comes a report as follows:

"Ore is coming out from the Premier mine at Stewart faster than ever before. The "Prince John" sailed from this port on the 25th with 500 tons, the largest cargo yet, for the Tacoma smelter. Shipments of this size will likely continue from now on every two weeks.

"The increase in the amount of ore coming out is directly due to the successful operation of tractors that were taken in several months ago. These tractors are now being worked night and day bringing a continual stream of ore over the snow."

CHANGES IN CANADA FOUNDRIES & FORGINGS

THE Canada Foundries & Forgings Co. recently announced changes in its executive staff. W. M. Weir, who retired from the position of president last year, has been re-elected president in succession to T. J. Dillon, who resigned. The board now stands as follows: President, W. M. Weir; vice-president, Hon. George P. Graham; general manager, James Arnold, Brockville; secretary-treasurer, J. H. Briggs, Brockville; Hon. W. J. Shaughnessy, Montreal; Lt.-Col. C. M. Monserrat, Ottawa; W. T. Sampson, Gananoque; Lt.-Col. C. W. McLean, W. D. Robb and B. F. Conway, Montreal.

The retiring members of the board are: T. J. Dillon, Welland; Henry Bertram, Dundas; Lawrence Chamberlain, New York; John T. Dillon, Buffalo; S. J. Lehurray, Montreal; J. A. Mackay and Colin O. Cameron. New names are: W. T. Sampson, W. D. Robb, B. F. Conway and James Arnold, while Hon. W. J. Shaughnessy, who retired from the board last year, has been re-elected.

JOHN DEERE COMPANY MOVES INTO NEW OFFICE

THE new offices of the John Deere Company, at Welland, Ont., are now completed and occupied by the company's office staff. The new building includes a large sample room where a full line of the company's products is kept permanently on display. This feature will be of great value to dealers and salesmen.

This firm looks for big business in 1921 and has recently added to its sales staff Richard Bower, of Harriston, Ont. and M. J. Sherlock, of Perth, Ontario.

A new transfer warehouse has been established at Brockville, Ont., under the supervision of H. F. Corr, making possible a twenty-four hour service to dealers in the surrounding territory. The same service is available from the transfer warehouse at Ottawa, supervised by the local dealer, J. P. Morris.

Eug. Julien & Cie. Ltee., of Quebec City, are handling the Eastern Counties of Quebec on jobbers' contract for the above.

Help the Farmer Produce at Lower Cost

THE best plan for Case Dealers to follow this year, we believe, is to sell Case Tractors on the basis of helping the farmer reduce his operating costs. Today the farmer is not particularly interested in increased production. What concerns him most right now, is to get more profit from such products as he may grow. He may not hope for higher prices this year, but he *can produce at lower cost.*

Explain to farmers who have need for power farming equipment the labor-saving features of Case Kerosene Tractors; the economy of kerosene operation; the long life and dependability assured by the excellence of Case design and construction.

We co-operate with you in developing sales for Case Tractors and other Case Power Farming Machinery through liberal advertising in the most influential farm papers of the United States and Canada.

Monthly we place before over five million farmers reasons why they should prefer Case Machinery. Let them know you are the Case dealer in their vicinity.

Personal acquaintance with the prospect and a careful inspection of his farm will enable you to recommend the Case Tractor and tractor-drawn or driven machinery of the size best suited to that farmer's need.

J. I. Case Threshing Machine Company

Dept. C215 Racine, Wisconsin

Toronto Branch: 343-9 Dufferin St., Toronto, Ont.

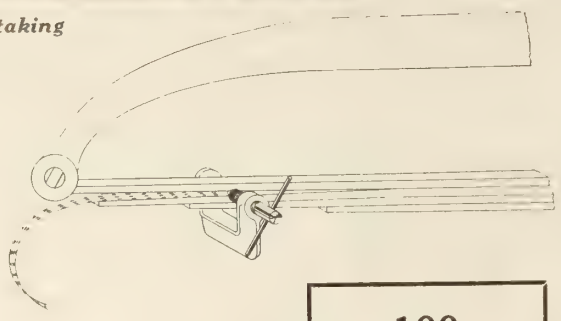
CASE

TRADE MARKS REG. U.S. PAT. OFF. AND IN FOREIGN COUNTRIES

KEROSENE TRACTORS

NOTICE: We want the public to know that our plows and harrows are not the Case plows and harrows made by the J. I. Case Plow Works Co.

Applied without taking springs down



A Source of Profit you may have overlooked

100 Per Cent.

Sounds unreasonable, but that's what you make on your investment in E-Z-E. E-Z-E is a veritable gold mine to a live wire. Don't let another "beat you to it." Write to-day.

You know how necessary smooth-working resilient springs are to the economical operation of a car. You know, too, how few motorists really give attention to springs. 99 out of every 100 motorists who come to you can be shown in a minute or two the importance of keeping springs properly lubricated and efficient.

A few words from you will open the way to a sale of

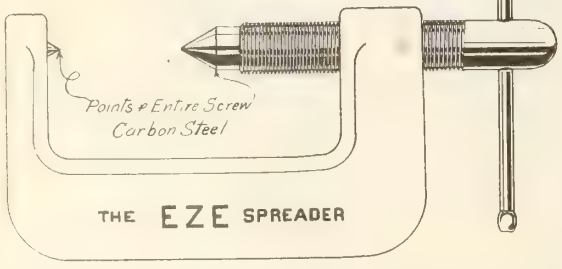
E-Z-E AUTO SPRING GREASING TAPE

This is something new—easy to apply without taking the springs down. Keeps springs resilient, prevents breakage, lengthens their term of usefulness, saves wear and tear on the engine, saves gas, saves tires.

Every motorist you talk to will eventually buy E-Z-E. It has a sales-future greater than most conveniences and accessories you are selling today.

E-Z-E presents a rare opportunity for a live garage or accessory man in every district. Grasp this chance for profit; claim your territory now.

E-Z-E Spring Spreader



Don't waste time, patience and good screw-drivers getting leaves of springs apart. Use the E-Z-E Spreader. The simplest, strongest, fastest-selling spring spreader on the market. Look at these illustrations—they show how easy it is to use the E-Z-E Spreader. Order a couple for your own use as well as a few for re-selling.

G. TRUSSLER, Orillia, Ont.

Traction and How It Is Obtained

IN order for any self-propelled vehicle to move itself over a surface it must obtain traction, that is, a sufficient grip upon the surface over which it is traveling to overcome its own inertia and any other forces which tend to prevent its motion. This is true of the automobile and motor truck just as well as the tractor. In the case of the automobile and motor truck, however, all they need to do is to obtain sufficient grip or traction to move themselves. In the case of the tractor it must not only obtain sufficient traction to move its own weight, but to overcome the resistance of the load it is pulling, whether it be plows or any other farm implement.

There are two ways in which traction can be obtained by any machine designed to draw a load. The first is by friction between two surfaces. This usually requires considerable weight on the wheels in order to gain the necessary friction. A good illustration of this method is the locomotive, which depends entirely upon friction between its drivers and the steel rails to enable it to pull its load. The other method is by direct grip upon the surface over which the wheel is traveling. This sort of grip is well illustrated by the cog roads which are frequently found on the mountain railways. Here simple friction will not afford sufficient grip to pull the load up the hill, hence it is necessary that the engine be given a positive grip and a rail fitted with teeth which can be engaged by a gear or cog wheel, driven by the engine, is placed on the tracks. This enables a much lighter engine to pull the load, and a large percentage of its power is so utilized.

With the farm tractor it is possible to obtain traction in either of the two ways already mentioned. A perfectly smooth wheel, without lugs, could be used on a tractor to pull plows under ordinary conditions provided the tractor had sufficient weight to generate the necessary friction.

This method, however, would require an excessive amount of weight and would cause a great deal of unnecessary packing of the soil. It is the general practice, therefore, to make use of practically the same system as is used on the cog railroad, by equipping the traction wheels with lugs or spuds which afford a positive grip upon the soil, the same as the cog wheel on the engine grips the teeth on the cog rail.

This permits a much lighter tractor to obtain the same grip upon the ground as a much heavier tractor with smooth wheels. The amount of traction afforded by these lugs depends upon the amount of soil they grip and the nature of the soil, as well as the weight resting on the wheel. A lug 3 inches deep in light sandy soil will not afford as much traction as a lug 1 inch deep in hard clay soil.

There is a difference between the operation of a tractor wheel with lugs and the cog wheel on the mountain climbing engine, however, which should be fully understood by every tractor user. The cog wheel on the mountain climbing engine can easily engage the teeth on the cog rail since the notches are ready to receive the cog wheel teeth. No power is consumed in getting this grip. With a tractor wheel, however, there are no notches ready to receive the lugs, but they must be forced into the ground in order to obtain the desired grip. To do this, enough of the weight of the tractor must be raised on to the lugs, by the power being developed by the engine, to force them into the ground. The power used in doing this is wasted so far as doing any real work is concerned, hence it is desirable that lugs be used which will require as little power as possible to push them into the ground and yet obtain the necessary traction.

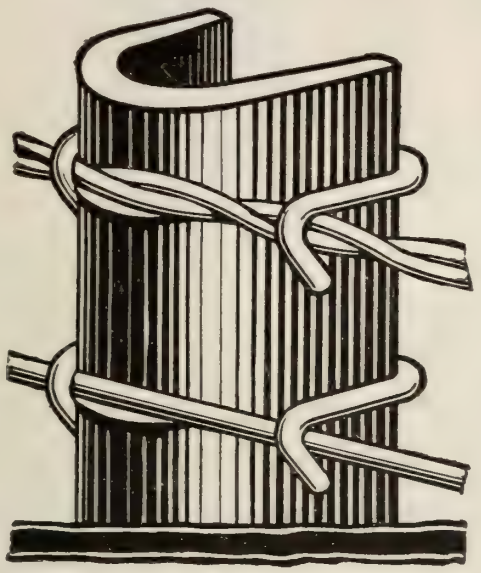
A tractor with no lugs on its wheels will roll quite easily over a hard surface such as a paved street or a wooden floor. A man can easily move a heavy tractor about on such a surface so long as the drive wheels are perfectly round, but when the wheels are equipped with large lugs it will be found quite a task to move it over such a surface. This is because the weight of the tractor which rests upon the drive wheels must be raised to the height of each lug as it passes over it. The same principle is involved in driving over ground with a tractor fitted with lugs. As the wheel turns and a lug touches the ground the weight of the tractor begins to rest upon the lug and it is forced down into the soil, but in doing this a certain amount of power developed by the engine has been used, as already explained. This amount depends upon the nature of the soil and the shape and size of the lug. A sharp lug will, of course, enter the ground more easily than one which has a blunt face. Furthermore, a lug will enter soft ground more easily than hard ground.

Since hard ground will afford a better grip for a lug than will soft ground it is obvious that when plowing on hard ground a tractor does not need nearly as large lugs as when working on soft ground, and to use the same height lug as is required on soft ground is wasting power which is paid for in the fuel bill, because it requires so much of the weight of the tractor to be lifted upon the lug in order to press it into the ground, doing useless work since it is obtaining a much greater grip than is really required. Or, in case the lug is not forced entirely into the ground, power is being wasted in lifting the weight of the tractor simply to be lowered again.

When the lugs do not enter the ground to their full depth the effect is the same as driving the tractor over a lot of small blocks or obstructions. Everyone knows that a small block under a wagon wheel will offer considerable resistance to the moving of the wagon, especially when the wagon is loaded. The same effect, constantly repeated, is obtained on a tractor when unnecessarily high lugs are used.

These illustrations show the desirability of using different kinds of lugs under different soil conditions. It is ridiculous to attempt to use one type of lug for all conditions. When plowing on hard ground a small spud not much larger than a rivet head will be found to be all that is required to give sufficient grip to pull the plows, and the smaller the lug used the less power will be required to move the tractor and the more will be available for pulling the plows. When working on soft ground such small spuds will not afford enough grip and the wheels will slip. Slippage means loss of power besides reducing the amount of work done through slowing down the speed of the outfit. Either extreme, therefore, is bad business. The lugs should be just large enough to give sufficient traction to pull the load with a small margin of safety. This means that more than one set of lugs will be required for almost every farm. Sometimes two sizes will be sufficient and sometimes more will be needed, depending upon the variation in the soil itself and the conditions under which it is worked. Don't waste power and money by using the wrong kind of lugs.—From Tractor Farming.

"Burlington" Steel Fence Posts



Farmers are quick to see the advantages of "Burlington" Steel Fence Posts.

They are easily put in—no holes to dig or earth to fill in.

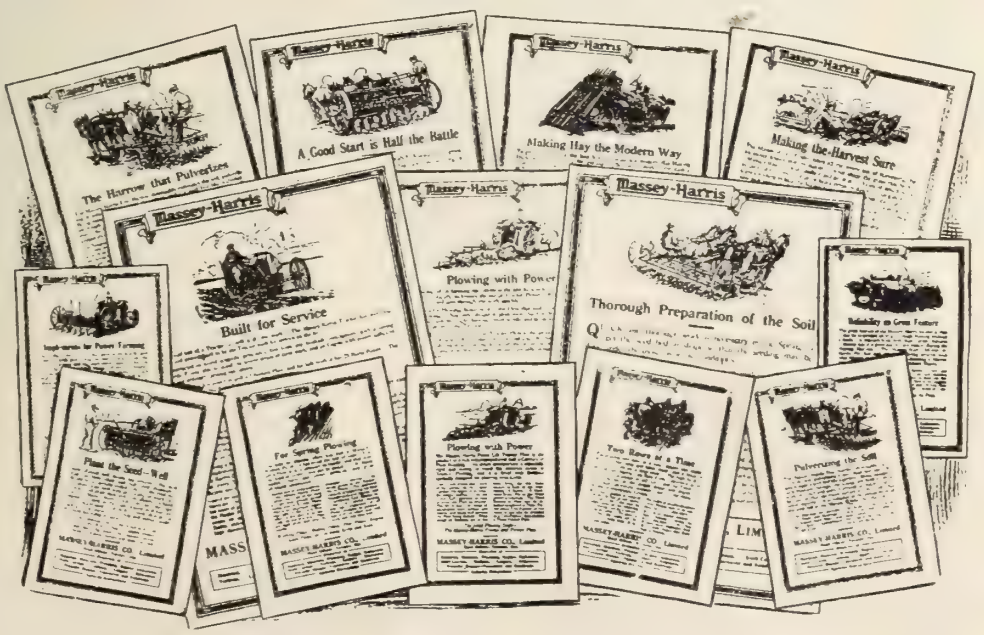
The wire is quickly attached with convenient clips.

They are so strong they will withstand any farm strain.

They provide a permanent straight fence and last indefinitely.

You can readily interest farmers in your locality in "Burlington" posts. They are thinking about spring fencing now. "Burlington" advertising in the leading farm paper helps you make sales. Write for complete details.

Burlington Products Limited
316 Sherman Ave. N., Hamilton, Canada

These Ads. Will Help You Sell Massey-Harris Implements

The advertisements here reproduced are a few of a series now appearing in all of the leading Farm Papers.

Every Implement Dealer realizes how much easier it is to sell a well-advertised line of implements. This is because the "Prospect's" mind has been favorably impressed by the reading of the ads., and in fact, in many cases, the reading of the ads. creates your "Prospect."

This Farm Paper Series, together with our Direct-by-Mail Advertising, consisting of numerous attractive folders, are a powerful factor in preparing the way for the Massey-Harris agent, and making it easy to sell Massey-Harris Implements.

No need to explain who Massey-Harris is, and what the name stands for. It is known to all farmers and stands for the best in Farm Implements, and has done so for generations.

Head Office Toronto **Massey-Harris Co., Limited,** Factories at Toronto Brantford (2) Woodstock Weston

Threshers, Wood Splitters, Saw Benches, Drag Saws

We specialize in the manufacture of those products, and can take orders at lowest prices; our situation as to workmanship and material being the very best.

Why not write to-day for catalogue and quotations?

The Warwick Machine Company
Limited
Warwick, Quebec

Keeps the windshield clear KLEARSIGHT TRADE MARK *Cleans brass and nickelled parts*

Contains No Acid

Gives clear vision in all weathers

Cleaned with Klearsight the windshield is protected from moisture by a transparent waterproof film.

Easy to apply—just like washing the windshield — place a little Klearsight on a damp cloth, rub lightly and polish.

Cleans brass and nickel without scratching

Klearsight is just as useful on metal parts, makes them shine like new and protects against dampness.

Sell Klearsight as the all-purpose cleaner for motorists. It makes friends wherever used.

We need an agent in your locality. Write quick.

PASZNICKI BROS., Limited
21 Richmond St. West TORONTO

THINK YOUR WAY TO SUCCESS

By Alton G. Seiberling, Vice-President of The Haynes Automobile Company.

THE key to success to-day has not changed from what it was fifty or a hundred years ago. It still is right thinking which has its application in action—action that is the result of the correct decision.

The truism that brains are superior to brawn never needed more emphasis than it does to-day. The business man who thinks logically, makes unerring decisions, and then has the courage of his convictions to act boldly on those decisions, is the man who will forge ahead and attain his goal. If he thinks along the wrong lines, if his reasoning power is weak and his judgment warped, his decisions will be incorrect and the result will be failure.

The keen business man cuts a straight passageway through all obstacles to success. The mind that is not trained to analyze difficult problems becomes panic-stricken in the face of seemingly insurmountable obstructions and is lost in chaos of despair.

The executive head of any large corporation or business institution must be an expert thinker. Each day he must render important decisions without delay, on the result of which depends the success or failure of the organization. He holds his position merely on the strength of his ability to think correctly.

From my own experience and from my observation of many business successes and failures I can recommend no surer guide along the road to the attainment of life's ambition.

E-B POWER CONTROL DISC HARROW

A NEW disc harrow has been placed on the market by the Emerson Brantingham Implement Co., of Rockford, Ill. It operates by the pull of a rope from the tractor seat, and the power for angling or straightening the gauges is obtained from the discs themselves as they turn. The clutch is on the same principle as that used on the power lift plows. The lever on the clutch bar, the makers claim, is handy to operate, and regulates the angle of the gauges.

When work is on soft ground and the tractor digs in, the gauges can be easily straightened by hand, by releasing the clutch and moving the lever on the hitch back and forth. This, it is claimed, does away with uncoupling of the tractor and using a chain to pull out, and there is no need to back up. The frame can be adjusted to regulate the pressure.

Bearings are lubricated from the underside when there is no pressure, and hard oil can work in. The scrapers can be operated from the tractor seat by a rope. All parts are of steel. Made in all standard sizes.

The turn of a thumb screw sets the scrapers away from the discs when desired. The new disc harrow can be adapted to any tractor.

HART-PARR NEWS

HART-PARR dealers' conventions will be held during the first two weeks of March, at Calgary, Edmonton and Grand Forks. This will conclude a long series of dealers' conventions held by this company, starting the first of last October and continuing until now. In that period their dealers have met with their distributors for a two days' school of instruction in sales and service work, which has resulted in a splendid unifying of the entire field organization about the Hart-Parr system of sales and service.

W. W. Clark, expert manager of the Hart-Parr Company, has just returned from a four months' business trip through Europe. Mr. Clark visited the Hart-Parr distributors in England, Spain, France, Belgium, Denmark and Sweden. He found Europe suffering from the same economical troubles as in America, but with conditions made much worse on account of the very unstable exchange which has made trade almost prohibitive. With the return of exchange to anywhere near normal conditions, Mr. Clark believes European trade will develop rapidly.

APPOINTED FIAT DISTRIBUTOR

M. A. KENNEDY, formerly with the Ontario Motor Supply Co., Toronto, and one of the best known automotive men in Ontario, has taken over the Crompton Car Co. salesrooms and garage at 106 Adelaide Street West, Toronto. Mr. Kennedy has been granted the Canadian distribution rights for the Fiat cars, trucks and tractors.

TO MANUFACTURE AUTOMOTIVE PARTS

THE Armstrong Motor Works, of Lachine, Que., manufacturers of gasoline engines for over sixteen years, have recently discontinued this line to develop and manufacture, on high production basis, piston rings and pins, and other automotive parts for automobiles, trucks and tractors. Production has already started on a new piston for Ford cars, of the company's own design, for which they claim many advantages. This piston is of the light weight class and has been subjected to severe tests. The manufacturers claim for this piston an average economy of 20 to 25 per cent. on fuel and oil consumption.

OPEN BRANCHES IN ENGLAND AND FRANCE

GEORGE H. TOWNSEND, President and E. V. Hennecke, sales-manager of The Moto-Meter Company, Inc., Long Isiand City, N.Y., have returned from a recent trip to England and France. They have established a branch factory in each of these countries to meet an increasing demand for the company's product in the foreign field.

The Benjamin Electric, Limited, of Tottenham, London, will have charge of the manufacture and distribution in England, and the French factory at 50 Avenue de la Grande Armee, Paris, will be conducted by F. Repusseau et Cie. Both factories are already in operation.

NEW WASHING MACHINE COMPANY

THE Home Appliance Manufacturing Co. is a new concern incorporated at Winnipeg with a capital of $250,000 for the purpose of manufacturing washing machines. The company is composed entirely of local men.

MANITOBA'S DAIRY PRODUCTS

THE value of Manitoba's dairy products for 1920 was $15,939,846. Over 25,000 farmers engaged in dairying; of these 900 to 1,000 are shippers of milk. During the year there were 7,668,802 pounds of creamery butter produced, for which an average price of fifty cents a pound was received; 9,540,281 pounds of dairy butter was sold at an average of forty-three cents a pound. Cheese, of which 226,220 pounds was produced, was sold at an average of twenty-seven cents a pound; and 153,254,389 pounds of milk averaged thirty-nine cents a pound.

B. T. H. MAGNETOS FOR CANADA

THE British Thompson Houston Magneto Co., of Rugby, England, manufacturers of the B. T. H. magneto, is another addition to the list of British automotive concerns seeking for a market for their goods in Canada.

The Canadian General Electric Co. will act as Canadian distributors and will appoint agents. The B. T. H. magnetos were used extensively on airplanes during the war and are standard equipment on many of the best known British cars.

Cletrac Dealers Sure of A Big Year—

BECAUSE:—They're backed up by the strongest advertising campaign we have yet put over. It will reach every farmer from Nova Scotia to Vancouver Island—not once, but many times, throughout the year.

BECAUSE:—Cletrac's a sure seller. It works fifty-two weeks a year. Its construction makes it dependable in all weathers.

BECAUSE:—Cletrac dealers are real live salesmen who have studied Cletrac and know that every progressive farmer is a Cletrac prospect.

BECAUSE:—Our increased production insures they'll have Cletracs in plenty to sell this year.

BECAUSE:—The Cletrac proposition provides for a good margin of profit.

Why don't you get in with the Cletrac crew and be in line for a successful year? We have an attractive dealer offer which we will be glad to send you.

Go after prospects hard and get your orders in at once.

The Cleveland Tractor Company of Canada, Limited

Home Office:
21 Ottawa Street, Montreal

Western Sales Office:
261 Fort Street, Winnipeg

Hard this way, but—

Easy on a track the Cletrac way.

SPECIFICATIONS

Horsepower: 12 at draw-bar, 20 at belt-pulley.
Length: 96 inches.
Width: 50 inches.
Height: 52 inches.
Weight: 3,455 pounds.
Turning Circle: 12 feet.
Traction Surface: About 800 square inches.
Centre to Centre of Tracks: 38 inches.
Belt Pulley: Diameter 8 inches, face 6 inches.

The New Phase in Farming

Farmers are to-day faced with lower prices for farm products. Production costs must be reduced. The Canadian farmer turns naturally to Cletrac. Cletrac cuts the cost of crop production to the bone. It means better yields and a sure margin of profit.

Cletrac
TANK-TYPE TRACTOR

Automotive Accessories *and* Implement Equipment

SHULTIS SECTIONAL RADIATOR

THIS is a new radiator for Fords made in a series of seven sections. Each section is independent of the other parts of the radiator. The makers claim that a section can be removed in five minutes with an ordinary screwdriver and wrench. In changing sections it is also claimed that the radiator does not need to be removed from the car.

All circulating parts are of solid brass and hexagon construction. The makers claim with this construction the radiator will not break when frozen. Replacements can be made easily and at any time. The makers are the Shultis Automotive Corp.

MANLEY PORTABLE WORK BENCHES

MANLEY portable work benches take the shop right to the car. For service work, the makers claim, they are a great time, labor, room and money saver. It is not necessary, it is claimed, to run car into the repair shop for minor repairs and the mechanic does not waste a lot of time running back and forth for a vise, this or that tool, or supplies, etc. He has his shop right with him.

The benches are of substantial all steel construction, with solid oak top 2 in. thick for attachment of the vise and other tools, steel drawer that won't bind, shelf partitions seasoned wood, roller bearing casters, and provision made to lock the front and rear wheels, making the bench immovable when using the vise for heavy work.

The benches are made in two sizes, the smaller one is intended primarily for minor repairs and service work. The bench top is 44 inches long by 13 inches wide; height, 34 inches, and weight 150 pounds. The large bench is intended for use in the general repair shop. The top of this bench is 64 inches long by 20 inches wide, 34 inches high and weighs 300 pounds. Manufactured by the Manley Manufacturing Company.

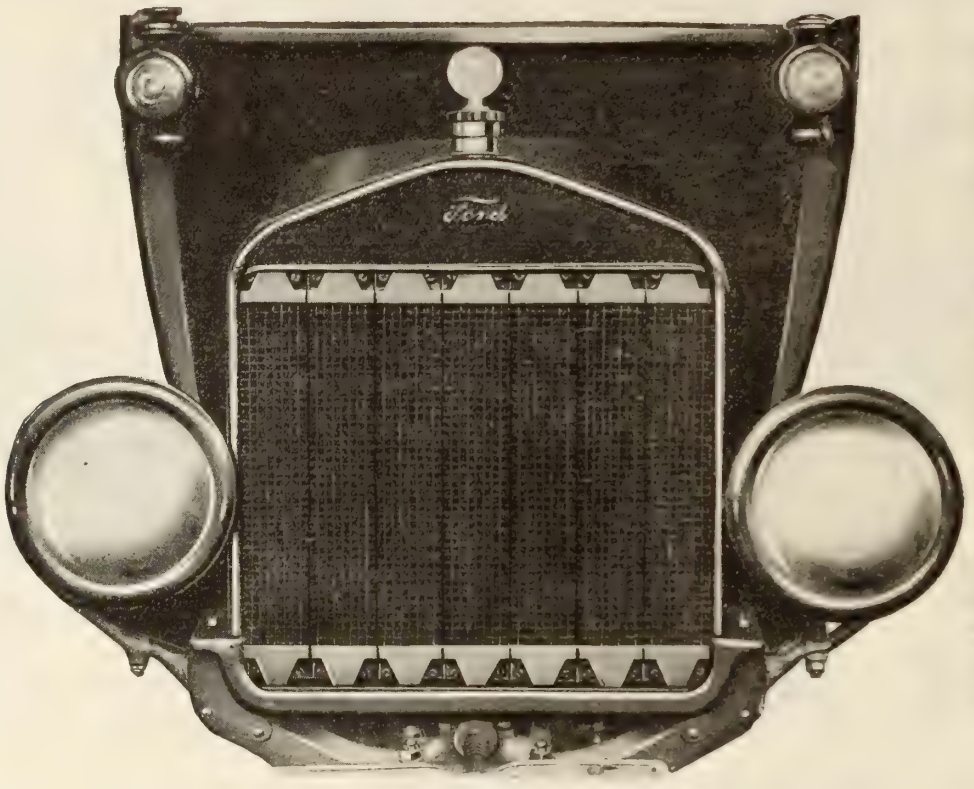
LOUDON STORM AND SUN SHADE

THE Loudon adjustable storm and sun shade is designed for Ford runabout and touring cars. It is attached independent of either the top or the opening or closing of the windshield.

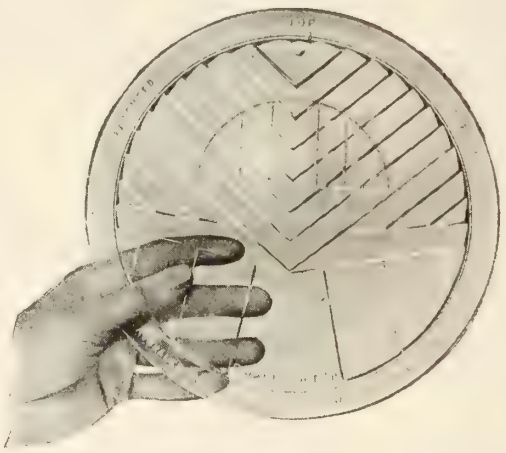
The shade consists of a reinforced flat steel frame covered with best grade rubberoid top material, thus giving rigidity and long wearing service. It is ten inches wide, affording sufficient projection in front of the windshield at any angle to protect the driver and passengers from the discomfort of sun glare or the fear of accidents caused by a rain or snow clouded windshield.

It is adjustable to any angle desired to suit the comfort and safety of the driver. The adjustment ranges from a horizontal position to a nearly vertical position.

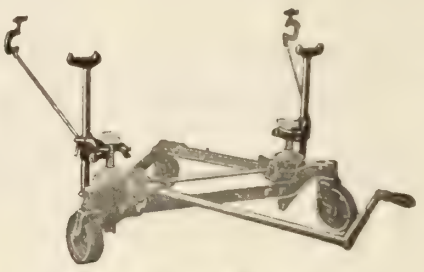
If the side curtains are in place, the makers say, the shade can be adjusted from the driver's seat with ease and without becoming exposed to rain or snow. It is manufactured by Loudon, Incorporated.



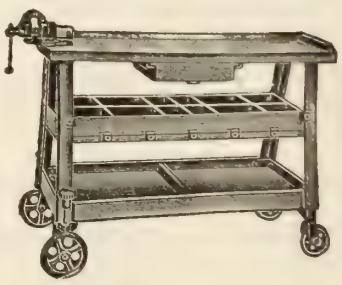
Shultis Sectional Radiator



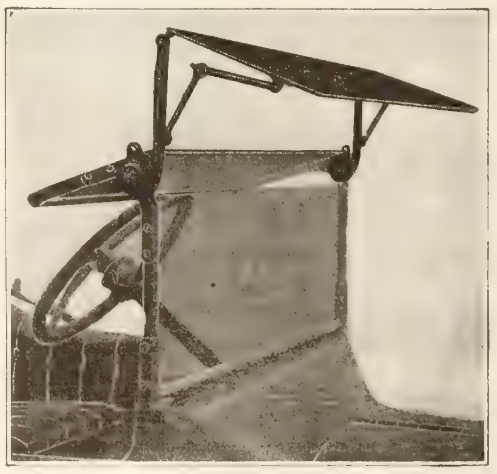
Shaler Roadlighter



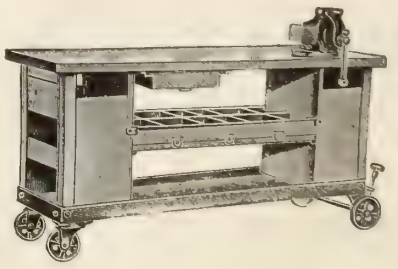
Weaver Body Extension



Manley Portable Bench



Loudon Storm and Sun Shade



Manley Portable Bench

SHALER ROADLIGHTER

THE Shaler roadlighter is distinguished from all other antiglare lenses, the makers say, by the fact that instead of merely complying with all headlamp laws by stopping glare, which could easily be done without any lens at all, it distributes all of the light from the headlamps over a carefully chosen area of the road.

It throws a light on the road, it is claimed, that looks as if it came from a pair of regular headlamps plus a pair of spotlights. The distance light is as strong or stronger than with plain glass, and there is an especially brilliant illumination of the edges of the road that enables the user to see plainly, even while passing other cars whose headlamps glare. This is due to the fact that instead of simply bending the light down and fanning it out sideways, the roadlighter divides the light into three overlapping beams, which are thrown toward the road at different angles so as to give a broad, smooth light for the first hundred feet and a narrower, intense light far in the distance. It is made by the C. A Shaler Company.

WEAVER BODY EXTENSION

THIS body extension is designed to clamp securely to the raising screws of the Weaver garage size auto twin-jacks and is for the purpose of supporting a car from the frame bolster, instead of from the axle. It is frequently necessary to remove the rear system or the front axle of a car for repairs or overhauling and the primitive method of handling this work is to jack the car up and support it on wooden horses or boxes while the repairs are being made. This would not be quite such an inconvenience if it were not for the fact that, very often, particularly with the rear system, it is found necessary to send to the factory for repairs, thus tying up the car for many days or weeks. The result is, the dismantled car, supported by boxes or other immovable material frequently encumbers valuable space in the shop for an indefinite length of time.

By using this device, it is claimed, the dismantled car could be quickly transported into an out-of-the-way corner of the shop where it would not obstruct the floor space in front of the bench while awaiting the receipt of repair parts from the factory.

In operation the clamp brackets for supporting the extension rods are applied to the screws of the Weaver jack directly under the saddle. The inside of the jaws of these clamps are threaded to conform snugly to the threads of the screws and the jaws are securely clamped onto the screws by heavy bolts. This forms a connection, it is claimed, which cannot slip, even under the most severe pressure.

The extension arms are made of solid steel shaft 1⅛ inches in diameter and the clamp jaws of cast steel, very strongly designed. The brace rod extends forward from each clamp and is securely attached to the running board of the car on either side by means of a heavy screw clamp. This securely supports the attachment while the car is being transported. Made by Weaver Mfg. Co.

A Joint that Cannot Shift

When you are recommending ExcellencE Rings to a customer get him to take an "ExcellencE" in his hands and see how it operates. Let him demonstrate to himself that the joint of an

EXCELLENCE 2-PIECE PISTON RING

does not and, in fact, cannot possibly shift, work loose or become detached.

Examine an ExcellencE Ring yourself. See how the two pieces are so fitted as to automatically and surely pick up any "slack" there may be, how the ring expands and contracts **either way** to keep a tight-sealed combustion chamber.

"The one Perfect Piston Ring" that never breaks when putting on is the easiest to sell and the safest to recommend.

LAMONTAGNE LIMITED *Wholesale Dealers in Automotive Equipment* QUEBEC WINNIPEG **MONTREAL**

Made in Canada and Better Made

VETERAN TRUCKS

Oversize.
Well Balanced.
Dependable.
Low Operating Cost.
Last Longer.
Depreciate Less.
Command a Higher Re-sale Price.

Good Territory Still Available

EASTERN CANADA MOTOR TRUCK COMPANY, LTD.
HULL, QUE.

STURDY CREEPER

THE Sturdy creeper, manufactured by the Gray-Heath Co., is built for the repairman who wants a serviceable article that will not break down in use and that is low enough to allow him to slide under the car and narrow enough to work on with plenty of room to use his arms and elbows.

It is made of seasoned hardwood slats, 40 x 1¼ x 3¼ inches, securely bolted together. There are no nails used in its construction. The casters are ball bearing and built for strength. A padded head rest saves strength on the neck and shoulders.

HOKE SHONTZ LEAD BURNING OUTFIT

THE Hoke Shontz lead burning outfit works with oxygen or city gas, either natural or manufactured; also with oxygen and hydrogen, or oxygen and acetylene. The outfit consists of a regulator and gauge, also a high pressure indicating gauge, and torch, with two 6-ft. lengths of hose. The torch is fitted with needle-valve shut-offs and is easily adjusted by finger and thumb. The hose is cemented to the metal tail piece, which connects with the regulator. No clamps are needed. Four sizes of tips and bench hook are included. The oxygen hose is made to withstand high pressure, while the hose for gas is made of rubber and has a large opening that will permit a capacity flow. The large gauge tells the contents of the tank; tells if full when received, when there is a leak and when a new tank is required.

The outfit does not require any water seal or other protection against forcing oxygen back into the gas pipes. Pilot light may be left burning on city or natural gas torches. There is no pilot light for the acetylene torch. The torch is easily cleaned by removing the oxygen hose, attaching it to the tip and opening the valve "full" on the torch and blowing out.

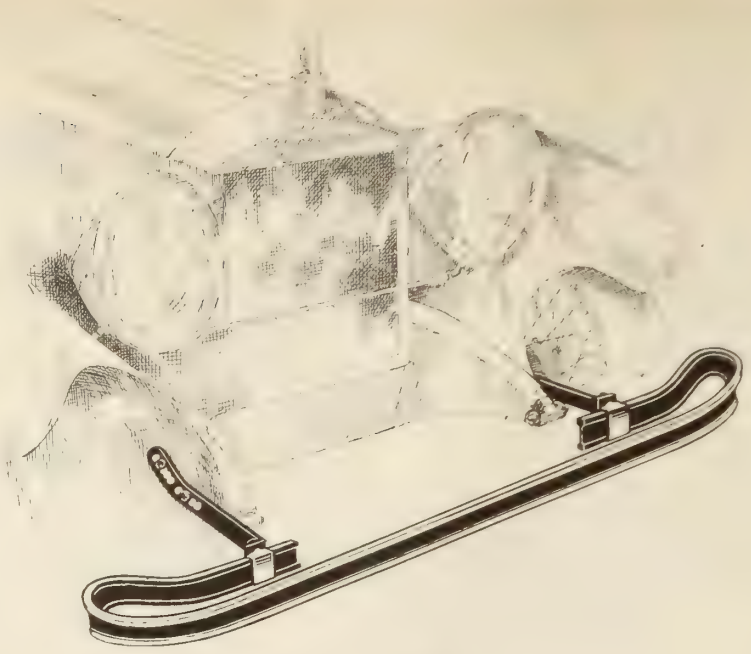
The outfit is distributed by the H. B. Shontz Co.

A WATER-LEVEL INDICATOR

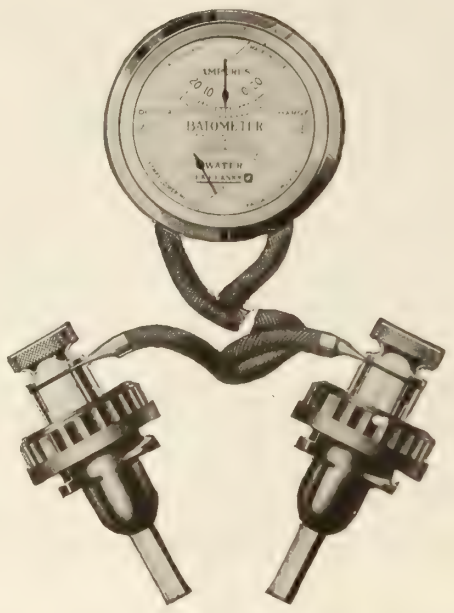
A REAL aid to comfort and confidence in car operation is found, it is claimed, in the new Batometer, manufactured by the Hempy-Cooper Mfg. Co.

The Batometer is a device for indicating to the driver the water level in the battery. It consists of two instruments mounted in a single case which replace the standard ammeter furnished on all cars. One instrument is a charge-and-discharge ammeter of the usual type and the other is an indicator of the level of the electrolyte. The ammeter is connected in the regular manner. The Batometer is connected by flexible wires to two lead electrodes mounted in caps, which replace the filling caps of the two end cells of the battery. These electrodes are uncovered, and when it falls below the tip of one or both electrodes the needle swings to "low water."

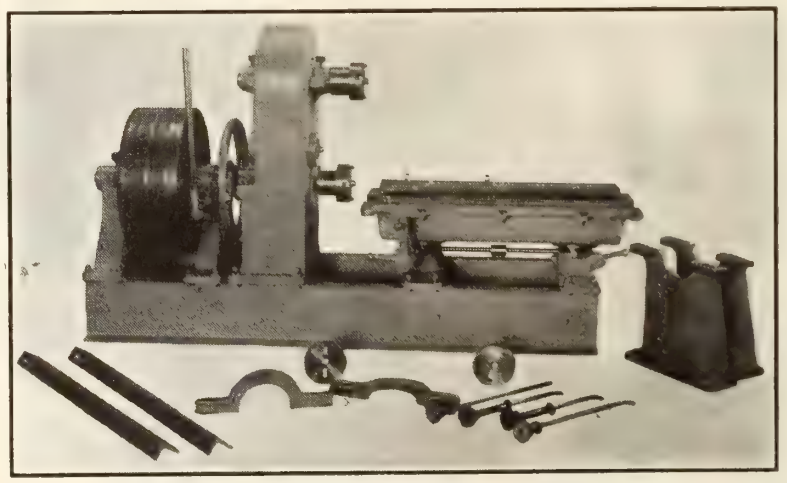
The makers say the Batometer will also warn of approaching trouble in this way: If the needle reads "low water" and yet an inspection of the cells shows that there is enough electrolyte, the battery needs attention at once. Thus the batometer will give a 24-hour warning of the most common causes of trouble before any damage can result and as these warnings are right under the driver's eye, they cannot escape his attention. It is furnished in nickel or black finish and in flange model for attachment by screws and flush model for attachment by a clamp.



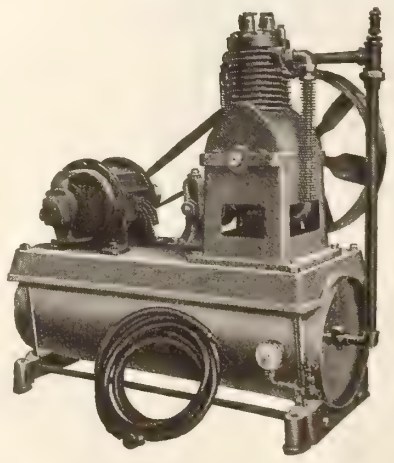
Hercules Bumpers.



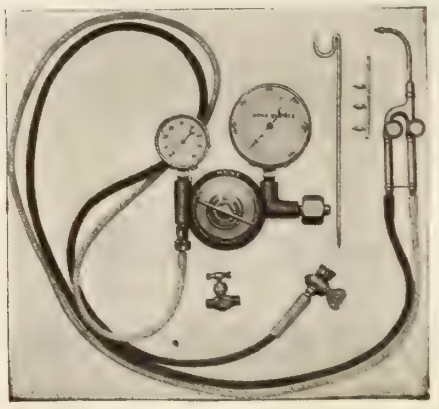
Water Level Indicator.



New C-O Universal Burning-In Machine



New Curtis 2-Stage Air Compressor



Hoke Shontz Lead Burning Outfit

HERCULES BUMPERS

HERCULES BUMPERS, LTD., Toronto, have placed on the market a line of bumpers for all cars, as well as 1-ton and 2-ton trucks. These bumpers are strongly made of special "I" beam spring steel, and owing to their unique construction they have a great spring resistance and are guaranteed against dragging when backing out from a parking station or garage.

They are attached to the car by universal patent brackets, which are constructed in such a manner that it is impossible for either to become loose or rattle. They are furnished in 5 styles, viz.: "A"—all bright nickel; "B"—striped nickel and colored enamel; "C"—nickel and black enamel; "D"—black striped and colored enamel; "E" all black enamel. The bumper is entirely Canadian. This company is also manufacturing a bumper similar to their standard line, except that it is lighter in weight and is known as "Hercules Junior," being specially suited for Fords, 490 Chevs. and other lightweight cars.

NEW CURTIS 2-STAGE AIR COMPRESSOR

FOLLOWING a demand to produce a 2-stage compressor built in accord with highest engineering practice, the Curtis Pneumatic Machinery Co. has now placed on the market a line of 2-stage air compressors, entirely original in design, and embodying the best features of the 2-stage principle.

In the Curtis 2-stage compressor the same fundamental features are embodied that established their single stage on the market. The 2-stage machines have not only all of the features of the single stage compressor, but have additional features, which are an advancement in compressor design.

The illustration shown is that of the Curtis style "V" stationary 2-stage motor-driven compressor unit. Full information regarding the Curtis line of air compressors can be had by addressing the company.

NEW C-O UNIVERSAL BURNING-IN MACHINE

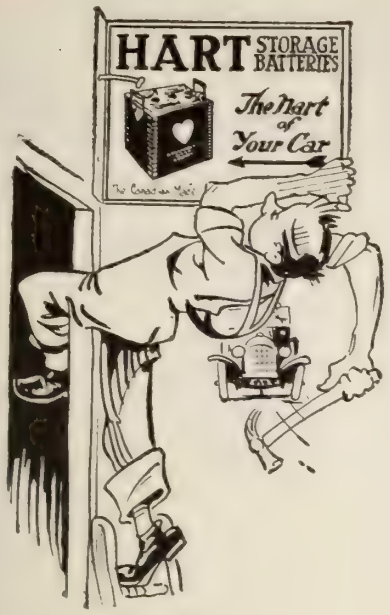
ONE of the most important announcements for many months to the automotive trade, jobbers and garage repair men, is word of the development of a universal burning-in and running-in machine, designed and built by the Canedy-Otto Mfg. Co.

The manufacturers claim for this machine that it will burn-in and run-in the bearings of any type of motor. Only one attachment is required and this is needed only for burning-in, valve in the head V-type motors. It is quickly attached and comes as part of the regular equipment. This attachment will also handle motors which do not have detachable heads, an operation which has puzzled the repair man for many years.

For simplicity and flexibility it is unique. The table is raised and lowered by a single control. This table is grooved like all high-class machine tool tables and the motor clamps can be adjusted to size of motor. The table also serves as a sump or crank case for the motor, so that the crankshaft splashes in fresh oil, in every way similar to the actual performance of the motor in operation.

The clutch is an extra heavy toggle type, driving through a silent chain, which is so noiseless that the operator can test the timing of the motor or detect noises after the bearings have been run-in.

The machine requires a floor space of only 90 inches over all, with an actual base measurement of 79 inches. Twenty h.p. is sufficient to run the machine to capacity, under the most severe conditions, with the largest of motors. A single lever controls the raising and lowering of the table with a tension lock. All parts are highly machined.



Put HART Into Your Business

The Hart Battery

As a Self-Starter for Garages and Auto Supply Houses, we can safely recommend the Hart Battery. Get your Hart sign upon the door post as soon as you can, for there is a lot of Better Battery business to be picked up right now.

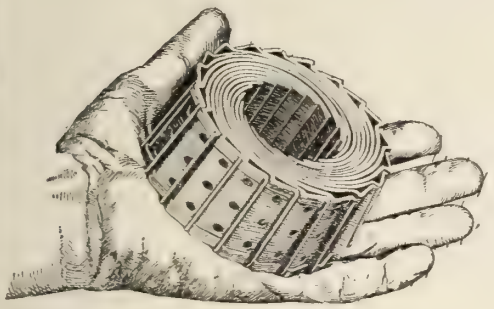
Many car owners studied the H. C. of L. and decided to make their old batteries work a while longer. They know better now, and chastened, yet hopeful, they will halt at the sight of your HART sign to order the battery that means a quicker start, brighter lights and a hotter spark.

Write right away for dealer proposition

The Hart of Your Car

The Canadian Hart Accumulator Co., Limited
Montreal - Canada

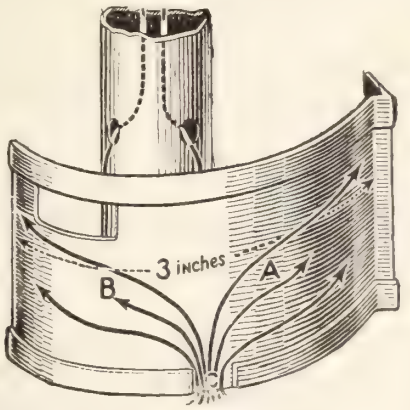
More SELLING FEATURES than on ALL Other Separators Combined!



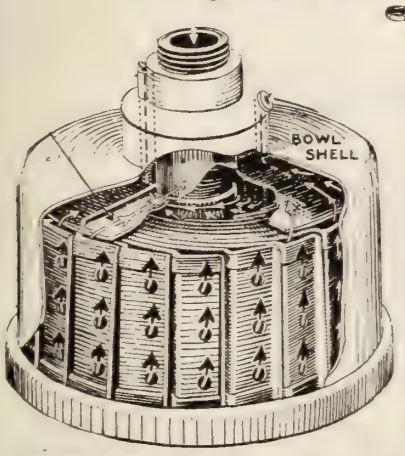
That's the separator you want to handle—the one that appeals to the dairyman because of its wonderful **"Straight Disc"**; because it is **guaranteed** to skim to 1/100 of 1 per cent., or **practically a perfect skim.** You want to sell a separator that will make reputation for you—that every one you sell will boost more sales for you, all because of the real merits of the separator and what it does in saving every bit of the butterfat that's in the full milk.

All the discs, on a key ring, are washed as one piece—in a jiffy, as simple as washing your breakfast dishes.

VIKING CREAM SEPARATOR



One of the wonderful "Viking" straight discs — the longest skimming surface of any disc made.



The skim-milk is thrown out and up over the cream disc, and is discharged through the skim-milk outlet.

If you are a live dealer—and the right type of dealer—a man who has sufficient foresight and judgment to appreciate what it means to get into a line of business for which there is great future and profit when conducted on the broad gauge plan of serving his customers to the limit—first, by selling them a separator than which there is none better made, and second, rendering such service as to have his customers become his best boosters and thereby help him find more customers—then write to us at once, and tell us that you will sell the wonderful Straight Disc "Viking" in your territory.

Every time you sell a Viking separator you make greater margin of profit, turn your money over faster and practically control the separator business in your territory. Come in and talk to us if you can, but in any event write for our dealers' plan and for prices, discounts, etc., and our catalog No. 137 will be mailed you at once.

Viking Model A, with base.

SWEDISH SEPARATOR COMPANY

422 Power Building, MONTREAL, QUE.

You Can't Get Away With It!

DON'T take chances. Use the McKee Standard Lens that complies with the new "no-glare law" and adds class to your car. The lens is one solid piece of crystal-glass scientifically designed—needs no dimmers —no attachments.

McKEE Standard LENS

It saves the light that is wasted by the ordinary window glass lens and adds it to the intense beam of light which is concentrated and projected through the horizontal prisms down close to the road bed for 600 feet ahead. And not a ray of this bright white road beam can go above 42 inches from the ground to blind approaching drivers.

Why risk your life and those of others with make-shift devices that weaken the light to comply with the law? For safety's sake use the McKee Lens—the lens that combines an intense road beam with an adequate side light.

Remember that the McKee Lens is legal. It is to your advantage to equip your car with the McKee now.

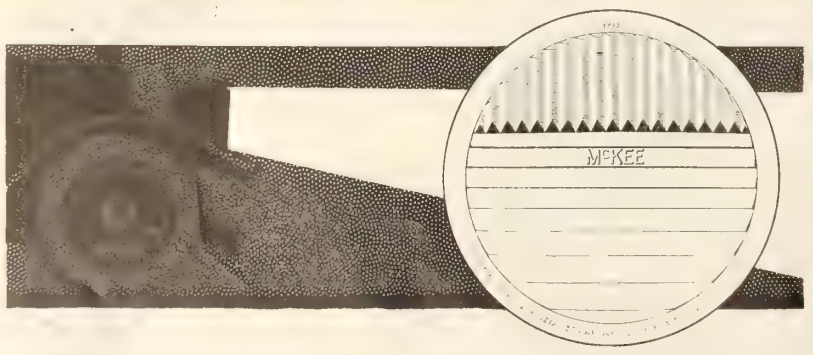
Garage Supply Co.

23 West Richmond Street, Toronto, Ontario, Canada

Distributors

McKEE STANDARD LENS

Made by McKee Glass Company, Jeannette, Pa.



Dairy *and* Household Supplies

DAIRY EQUIPMENT A GOOD BUSINESS

PROMISES of prosperity loom large upon the commercial horizon of America, says J. C. Rundall, general sales manager of the De Laval Company's Chicago branch, in the De Laval Monthly. The dairy business with all its allied lines can never be anything but a good business. During the period of dairy development there have been many ups and downs, both in the dairy business and in the separator business; but the old patient cow has always been on the job doing her part, and she is still doing her part better than ever before. Through care and intelligent handling man has succeeded in increasing her capacity for production many hundredfold.

The present business depression is felt much more keenly in the parts of the country where little or no dairying is done. This has always been so. The cow and the separator have placed the business of the man who milks cows on a cash basis with a steady income, and to-day the dairy farmer and the community where dairying is carried on to any worth-while extent are suffering the least from readjustment conditions, if at all.

While there has been some reduction in the price of dairy products, the percentage has been very small as compared with the reduction in the price of grain and other farm products. The dairy cow to-day, as always, furnishes the very best market for this grain.

These are facts with which we are all familiar, but I am wondering if the average merchant fully appreciates the value of this great industry and what it would mean to his business to have his farmer customers specialize in dairying. It certainly represents great opportunity for the individual. Never were the prizes higher for ambition, initiative and aggressiveness. The dairy equipment dealer is receiving much greater profit and satisfaction from the development of the dairy business in his community than simply the profit on separators. The advent of the milking machine has broadened his scope and gives to the industry a great labor saving machine.

What the business of this country needs right now during this reconstruction period, in our estimation, is for the merchants to get back to old-time principles and bring about the feeling of old-time confidence and co-operation that existed between them and the producers in the early days when the merchant not only knew all of his customers by their first names, but knew every member of the family. He took an interest in their welfare and they in his.

If dealers would spend as much time as possible in visiting their country customers, not alone for the purpose of selling them cream separators, milking machines, gasoline engines and other farm equipment, but with a view to bringing about the closer bond of human relationship, it would be to their advantage.

The dealer who is simply carrying a stock of machines on his floor and does not take advantage of every opportunity to get out among his farmer friends, simply waiting for them to come in to buy, is liable to carry some of that stock for some time to come. The farmer, left alone in his present frame of mind, is not in a buying mood. During the early days the only way that cream separators could be sold at all was for the agent to get right out on the farmer's place and show him the profit from the use of a cream separator. Cream separators cost more in those days than they do to-day and the price of butter was less than half of what it is at the present time. If it paid then for the agent to do country work, and it did, it will pay doubly to-day and more.

The salesman who feels that his responsibility ceases when he has secured his dealer's order for goods is not building for the future. The goods must be removed from the dealer's floor in order to secure the dealer's order for more goods, whether it is cream separators or other merchandise, and the only logical way to do this is to find the man, whether he be in the country or elsewhere, who needs his class of goods. Then use the sales ability that has been lying dormant for the past four or five years and prove to this customer the value of his line.

It seems to me that our opportunity is here. This year marks a crisis in our lives, so let's roll up our sleeves and make this period count as no year has counted before. Let us develop all our hidden powers and surprise our families and our friends—and even ourselves. We can do it. Thousands of men have done so in less promising times than these. This year is a limited number of golden moments which will never return to us. Let us make the fullest possible use of every one of them.

THE PROFITABLE CREAM SEPARATOR

IMPLEMENT dealers from many sections report that business has begun to pick up. Farmers are getting anxious about the coming spring season and are beginning to give a thought to their equipment. Dealers handling dairy machinery state that sales for this class of goods have been very satisfactory. Cream separators have been selling steadily; some dealers are even looking for a record year in this line.

Farmers are thoroughly sold on the cream separator and would consider it a hardship to go back to the old-time method of handling the milk. It would indeed be hard to meet with a farmer who does not own and operate a separator. And it is next to impossible to find a farmer who is not familiar with it.

Even in the early days of the hand separator with its small capacity, as compared with the machines of to-day, the farmer considered it a profitable investment and an important part of the equipment.

The dealer would do well to examine his prospect list for new sales and keep in close touch with his customers for replacements. Hundreds of cream separators will be replaced this year and it is the business of the implement dealer to see to it that, not 50 or 80 per cent., but 100 per cent. of these sales are made by him. He should never forget that he has a strong opposition in the mail order house. Many a separator has been bought through the mail order department of the big city store that should have gone to swell the implement dealer's sales.

HANDLING VEGA

THE Gilson Manufacturing Co., of Guelph, Ontario, have been appointed distributor in Eastern Canada for the Vega cream separator, product of the Vega Separator Co., of Eskilstuma, Sweden.

The best farmers use De Laval Cream Separators and De Laval Milkers. Therefore the best dealers sell them.

Now is the time to see about the De Laval Contract. Perhaps we need a separator or milker agency in your town. If you think we do send your application to nearest office.

THE DE LAVAL COMPANY, Limited

MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

Sooner or later you will sell the

De Laval

Cream Separator or Milker

Write in to-day for details on the full Columbia Line

The sale of Columbia Dry Batteries for the farm is long established on a large scale, and is extending.

For ignition on all types of gas engine, the famous Columbia "Hot Shot" is supreme.

The Columbia Portable Electric Lighting Outfit is indispensable for cellar, garret, closet, woodshed, barn, garage, and all outbuildings. Columbia Dry Battery renewals are a source of easy profit for dealers.

The use of Columbia Dry Cells for bells, buzzers, and thermostats is, of course, universal—a natural all-year-round business—a profitable trade that you will enjoy. Fahnestock Spring Clip Binding Posts without extra charge.

Made in Canada

CANADIAN NATIONAL CARBON CO., LIMITED
TORONTO AND WINNIPEG

Columbia Dry Batteries
—they last longer

1352143

WILL MAKE DISC WHEELS

THE National Engineering Company, Limited, of Sarnia, Ontario, who manufacture air compressors, automobile tire pumps and machine tools of various types, intend to add disc wheels to their list of products in the near future. This plant has been in operation since April, 1920, and at present from twelve to fifteen men are employed. The company's capitalization is $150,000 and the officers are: J. W. Lawrence, president and general manager; W. A. Swan, vice-president and factory manager; and J. E. B. Phelps, secretary-treasurer.

LOOKING FOR SITE

THE Blashill Wire Machinery Co., Montreal, is looking for a local site to establish a plant for making wire fencing. A new type of fence making machine has been designed by A. E. Blashill and the company have been planning the establishing of a plant for two years, but owing to the difficulty of securing raw material the plans were for the time abandoned.

NEW BUILDING COMPLETED

THE Chatham Malleable and Steel Manufacturing Co., manufacturers of automotive parts, sanitary stable equipment, etc., have completed an addition to the plant at Chatham. The addition is a one-story, heavy timber, frame building, 36 x 100 feet, constructed on a cement foundation.

It will be used for an assembling room and stock room, but some manufacturing processes will also be carried on in it, for which machinery has been installed. The estimated cost of the new building is approximately $5,000.

HEADS MANITOBA MOTOR LEAGUE

AT the annual meeting of the Manitoba Motor League, which was held recently, W. F. Tillman was elected president for the ensuing year. The retiring president, J. A. Banfield, in his report dealing with the affairs of the league during the past year, complimented the members on the splendid progress that had been made during 1920.

G. J. Nearing was unanimously re-elected as first vice-president and A. C. Emmett will again act in the capacity of secretary-treasurer.

HORSES AND TRACTORS COMPARED

A SURVEY of 87 New York farms by the State College of Agriculture shows that in plowing and disking a tractor accomplished as much in a day, on the average, as from seven to nine horses. At harrowing, a tractor accomplished as much as six horses; at binding corn or grain, as much as from four to five horses, and at mowing, as much as three horses. Horses on the other hand are more economical in the light and rapid operations in farm work.

READY FOR PRODUCTION

DOMINION MOTOR CASTINGS, LIMITED, of Windsor, have about completed the equipment of their new foundry and expect to be in operation within a fortnight. The foundry has a molding floor of about twenty thousand square feet, and a production capacity of 35 tons of gray iron castings. The equipment is of the latest type and includes at present Osborn machines on the molding floor, McDougall rumblers, Sterling grinders, Preston sand riddles, with much more to be added. The whole plant is designed primarily for high production rather than jobbing purposes. The officials are: President, A. Morrell, formerly of Windsor Machine Company; vice-president, R. P. Marintette; secretary-treasurer, C. A. Ripley.

TRANSPORTATION INVENTIONS LEAD THE WAY

ACCORDING to the annual report of George F. O'Halloran, Commissioner of Patents, which was tabled in the House on February 19, inventions in the transportation field exceeded those of any previous year. Motor vehicle parts lead the individual classes.

The total receipts of the Patents branch during 1920 was $354,495, an increase of $78,787. The surplus over expenditure was $183,909.

WINNIPEG MAN INVENTS NEW TRUCK WHEEL

T. H. EBURNE, of Winnipeg, has invented a truck wheel which is unique in construction. It is a cast wheel, using wooden tires instead of solid rubber. The invention provides a traction tread of wooden plugs, which are detachable and may be renewed when worn out.

MONTREAL C. F. M. STAFF ENTERTAINED

THE staff members of the Montreal branch of the Canadian Fairbanks-Morse Co., and their friends, were entertained to a dance recently by the employees of the company. The patrons and patronesses were: C. J. Brittain, vice-president and general sales manager, and Mrs. Brittain; H. B. Walker, controller, and Mrs. Walker; and H. V. Cordell, manager, and Mrs. Cordell.

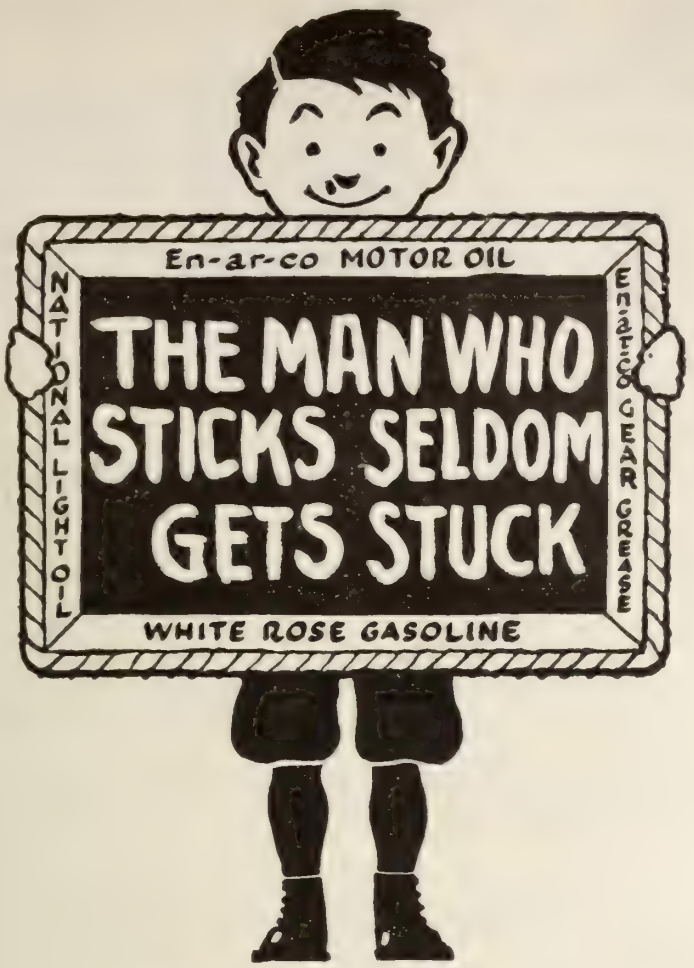
ALBERTA LICENSE FUNDS EXPENDED ON HIGHWAYS

HON. J. L. COTE, provincial secretary for Alberta, stated to a deputation of the United Farmers of Alberta recently that the amount collected by the Provincial Government during 1920 in automobile license fees totalled approximately $680,000. Every cent of this money, said Hon. Mr. Cote, is being expended on the highways of the province, aside from the department's necessary expenses.

HOT GAS PETROLIZER

AN electrically operated hot gas petrolizer which is claimed to make possible the injection directly into the intake manifold of any volume of hot gaseous fuel has been recently developed by the G. V. Van Buren Co. The essentials of this petrolizer are: A heating unit 3 in. long which is threaded into the intake and which communicates by a copper tubing dash injector which in turn connects with the fuel lines. There is a switch and a small safety light which indicates when the heating unit is in operation and when it is not. In operation the driver pulls a switch which permits current to flow into a resistance coil. This resistance coil surrounds a coiled section of tubing through which gasoline is permitted to flow when the injector is operated. In from 10 to 20 sec., according to manufacturers' claims, the gasoline in the tubing is raised to such a temperature that suction of the injector forces it out into the manifold in the form of hot gas. A noteworthy feature of the petrolizer is that engine suction is not depended upon to draw hot vaporized fuel into the engine.

SASKATOON.—George W. Matheson, vice-president of the implement section of the Saskatchewan R. M. A., has been on a trip to Eastern Canada, visiting friends at Meaford and Toronto.



The Sign that Builds Business for You

Boost Your Sales with this Big, Catchy Sign

IF you can get the people looking your way it's easier to get them coming your way.

And that's just what this big, six-foot boy-and-slate signboard does for you.

It is one of the most successful advertising novelties ever produced.

We furnish you with this big sign —it's over 6 feet high, cut to shape and strongly constructed—with copy to chalk up on the slate, so you can have something new every other day.

Everywhere this sign is put up it attracts instant and constant attention. People talk about it. And the dealers who display it get increased sales on all En-ar-co products.

MAIL US THE COUPON

You are surely interested in boosting your sales of En-ar-co Motor Oils, Gear Grease, Black Beauty Axle Grease, White Rose Gasoline, National Light Oil. This big sign will do it. Send the coupon to-day. It costs you nothing to know all about it. Simply fill in and mail us the coupon and we will send you full details by return mail.

CANADIAN OIL COMPANIES
Limited

Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary

CANADIAN OIL COMPANIES LIMITED.

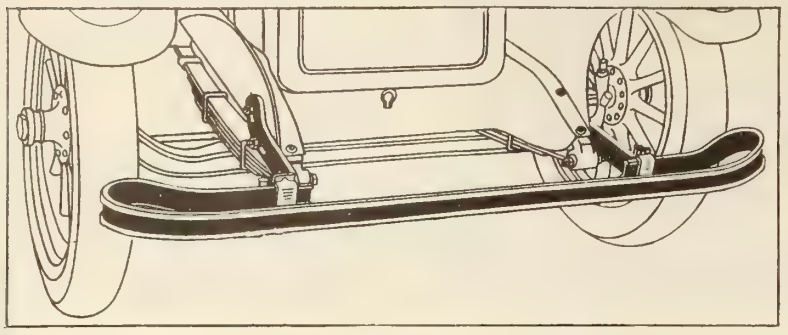
. . . . . .
(Your nearest branch.)

Tell me without obligation how I can secure your "Boy and Slate" and Epigram Service.

NAME . . . . . .
STREET . . . . . .
POST OFFICE . . . . . .
PROVINCE . . . . . .
I AM IN THE . . . . . BUSINESS.
(Indicate kind of Business.)

M.T.I.

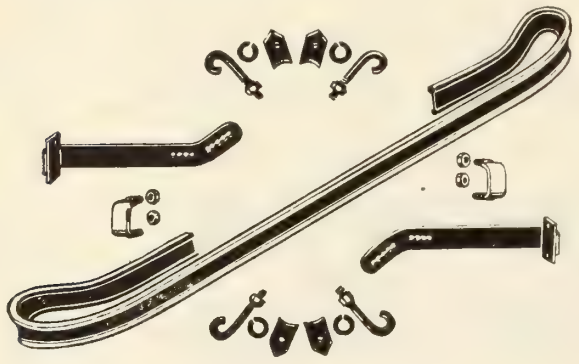
"HERCULES"



Resistance and Resilience Unequalled.

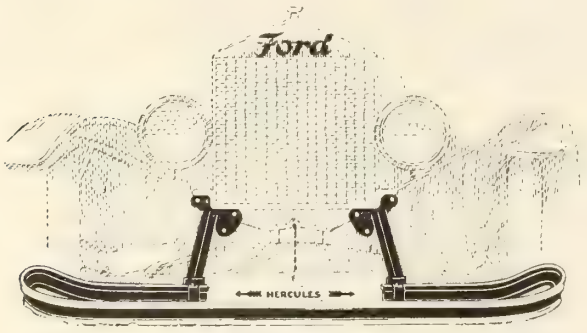
"STANDARD"

"A" All Nickel	17.00
"B" Nickel and Colored Enamel	16.00
"C" Nickel and Black Enamel	15.00
"D" Colored and Black Enamel	15.00
"E" All Black Enamel	14.00



UTILITY

"Hercules" is easy to put on any car, either back or front—this illustration shows every part.



"HERCULES JUNIOR"

for Fords, 490 Chevs. and light-weight cars

Prices Complete:

Style "C"	$14.00
Style "D"	13.00
Style "E"	12.00

HERCULES BUMPERS LIMITED

4 and 6 Spadina Avenue, Toronto

NEWS — OF THE TRADE FOR THE TRADE

QUEBEC

MONTREAL.—M. W. Drayton, buyer for Canadian Fairbanks-Morse Company, in Montreal, has been on a business trip to the States for the past week or more, visiting Chicago and other American cities.

QUEBEC.—Graveline and Kennedy, Ltd., has been incorporated with a capital stock of $150,000, with head office in Quebec City, to carry on the business of wholesale and retail importers and exporters of automobiles, motor-cycles, bicycles, etc.

ONTARIO

KITCHENER.—J. M. Schneider and Son, 63 Courtland Ave., are building a garage to cost $10,000.

BRANTFORD.—Brantford's second annual motor show was opened on March 2 by Mayor Wedlake.

TORONTO.—Grills Tractor Corporation, Ltd., is a new company recently incorporated with a capital of $150,000.

KITCHENER. — The third annual automobile show will take place on March 19-25. G. O. Phillips is the secretary.

KINGSVILLE. — McIllroy Belting and Hose Co., of Hammond, Indiana, have leased premises here for a Canadian branch.

GUELPH.—The annual motor show, under the auspices of the Guelph Chamber of Commerce, will take place on March 7-12.

HAMILTON.—Ellis-McIntyre Motors Ltd. has been incorporated with a capital stock of $150,000 to manufacture tractors, trucks and automobiles.

PICTON.—W. L. McCornock, for many years a farm implement dealer here, died recently, after a lingering illness. The deceased was in his 59th year.

TORONTO.—Incorporation has been announced of the Sumbling Machinery Co., Ltd., with a capital stock of $1,000,000 to buy, sell and repair washing machines, ironers and other machinery.

BRANTFORD.—The Bluebird Corporation, manufacturers of electric washing machines, is now running on full time with a full staff. The plant has been running for some time but five days a week, with reduced staff.

GUELPH.—The Sterling Rubber Co. suffered a severe loss when a portion of its plant was destroyed by fire. The blaze occurred in the new addition which had been recently made to the plant, and was caused by combustion in one of the dipping tanks.

GANANOQUE. — Provincial Fire Marshal Heaton held an enquiry into destruction by fire of the implement shed and garage of Joseph Neddow, one mile from Gananoque. The buildings were owned by F. C. Gray, of Gananoque. According to Fire Marshal Heaton, Gray admits to having had five fires within the last few years.

MANITOBA

BOWSMAN.—Gordon and Girard, proprietors of the Bowsman Garage, are conducting an up-to-date automobile repair business.

CRYSTAL CITY.—The Crystal City Garage has announced that, beginning with Feb. 10 all labor, supplies and repairs must be settled for before being delivered. Henceforth business will be conducted on a strictly cash basis.

ALBERTA

NANTON.—Rhodes Bros. are carrying on a general automobile repair business on all makes of cars.

CALGARY.—The Crescent Heights Garage is a new business opened here recently. The proprietors are W. A. McFarlane and C. J. Jesberger.

SASKATCHEWAN

NOKOMIS.—The Junction garage was destroyed by fire recently, the loss amounting to $300,000.

MAJOR.—McCullock and O'Keefe, hardware and machinery, have been succeeded by McKenzie Bros.

BALCARRES.—Hess and Decker have succeeded Cruickshank and Hess, implement and hardware dealers.

YORKTON.—D. Macpherson, manager of the Yorkton branch of the Massey-Harris Co., died suddenly on March 2. The deceased is survived by his wife and one child.

TRACTOR MOWER FOR CLETRACS

TO fill a long felt want, G. C. Willis, inventor of the Willis tractor guide, has produced a tractor mower designed for the Cletrac. It is being manufactured by the Hullet-McCurdy Tractor Co., who say it is simple, efficient and practical.

The Willis pivoted bar tractor mower, the trade name of the new attachment, has been subjected to exhaustive tests.

It has only four moving parts and no gears whatever. The pivoted cutter bar, it is claimed, guarantees protection against any damage to the mower mechanism which might result if the cutter bar was driven against an unyielding object. The bar is so attached that the shearing of a wooden pin allows the bar to swing around parallel with the tractor, and at the same time stops the sickle by lifting the belt idler pulley. The makers claim the cutter bar adapts itself to all unevenness of the ground and is not affected by the up and down motion of the front of the tractor. When desired the cutter bar rises to a perpendicular position and can quickly be made rigid, so that the machine can be driven over any sort of road to and from the hay fields.

The control lever which tips the point of the guards up or down, and the lever which lifts the sickle bar off the ground, are located within easy reach of the driver's seat.

The principal weight of the cutter bar is supported by an adjustable coil spring which permits the bar to float lightly on the ground.

The cutter bar, sickle (except sickle head), Pitman rod, Pitman head and wrist pin are standard six foot McCormick mower equipments. The sickle head is necessarily of special construction to permit the pivoting of the Pitman rod when the sickle bar swings back.

The speed of the sickle with reference to the forward motion of the tractor is so regulated that it makes no difference at what speed the tractor may run, the knife makes a clean, smooth cut.

This machine, the makers say, has been tested under all conditions, including the toughest wire grass. The position of the cutter bar on the front of the tractor makes it possible to run into all sorts of corners and cut in places where a horse drawn machine cannot reach.

The driving power is transmitted by belt running from the regular belt pulley, with tension maintained by the automatically controlled idler.

Between the Gears

and Frictional Wear

"Made in Canada"

"Spedolene"

forms a buffer that prevents wear and tear on gears and bearings. Its asbestos content forms a cushion between moving parts, holds the lubricant longer and permits no heat to be transmitted.

Spedolene is an all-year lubricant — equally effective in hot and cold weather.

Spedolene is the easiest lubricant to sell *the second time.*

Get our attractive dealer proposition.

Manufactured Solely by

Spedolene Refining & Manufacturing Co. LIMITED

MONTREAL

$2.00 per pair
3 colors
All sizes

$2.00 per pair
3 colors
All sizes

New Stopglare Lens

WHY PAY MORE, when $2.00 will purchase a Legal Lens, which does not cut down your range of driving light?

This lens is the prettiest lens on the market to-day and offers the best proposition to the Dealer. New Stopglare Lens are given the maximum rating in the recent Government test.

By popularity of price
By meeting the Law
By beautiful features

NEW
Stopglare
LENS
are leaders in their class

Sole Manufacturers

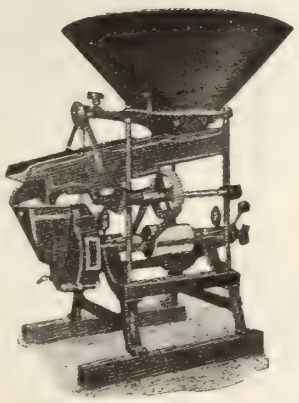
Ontario Plate Glass Limited

Hamilton, Ontario

$2.00 per pair
3 colors
All sizes

$2.00 per pair
3 colors
All sizes

He isn't a miller



The average dairy or stock farmer knows the beneficial effects of ground grain on his stock even if he doesn't know very much about milling or grinding. He knows what he wants and he expects his feed grinder to "know" how to produce it.

The best way to satisfy him, and the most profitable way, too, is to sell him a "Vessot" Feed Grinder. There are nine different sizes—you can suit anyone — and the "Vessot" is the simplest to adjust and operate. No technical knowledge is necessary.

"Vessot" Grinding Plates wear longer and cut better. Known by the "S.V." trade mark.

TRADE MARK S.V. REG

Write the nearest branch of International Harvester Company for agency proposition.

INVENTORS AND MANUFACTURERS

S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by
International Harvester Co. of Canada, Limited
Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John.

PERFEX

The Perfect Radiator

Perfex radiators for Fords are a quality product embodying features that cannot be had in other radiators.

A patented spring bracket suspension and a real radiator core of great efficiency.

The last word in Radiator construction

Perfex Radiator Co., Racine, Wisconsin, U.S.A.

P. A. C. McINTYRE & COMPANY
311 Confederation Life Building, Winnipeg
Direct Representatives for
Manitoba, Saskatchewan, Alberta and British Columbia

A Plain Question

What is the Canadian National Newspapers and Periodicals Association?

And a Frank Answer

For many years prior to December, 1919, all the publications in Canada practically were grouped in one association, known as the Canadian Press Association. In this Association there were three sections, Daily, Weekly, and Trade and Class. A little over a year ago it was mutually agreed by the publishers comprising these three groups that more effective work could be done for and by each section if separate organizations were formed, and, co-incident with that decision, there came into being the

Canadian National Newspapers and Periodicals Association

In this Association there are incorporated the following classes of publication:

Agricultural newspapers Business newspapers Educational newspapers Religious newspapers Technical newspapers and Magazines

Membership in the Association involves certain obligations. Every paper admitted has subscribed to ten rigid Standards of Practice, the purpose of which is to afford ample protection to both the subscriber and the advertiser. Every publisher pledges himself, before he is permitted to enjoy the benefits of membership, to

"Consider first the interests of the subscriber," to

"Work for truth and honesty in all departments," and, among other things, to

List of Members

The publications listed below—all of them members of the Canadian National Newspapers and Periodicals Association—should be given preferential consideration in the planning of an advertising campaign. They embrace mediums which appeal to the consumer (either city or farm dweller), merchant, business executive, purchasing agent, technical man, etc. The combined purchasing power of the readers of these papers is greater than that of the total of all other classes of publications in Canada. The facilities of the office of this Association are at the disposal of any firm planning an advertising campaign. We may be able to give you information that will make your advertising dollar buy better value.

AGRICULTURAL NEWSPAPERS
Agricultural Alberta
Canadian Countryman
Canadian Farmer
Canadian Motor, Tractor and Implement Trade Journal
Canadian Poultry Review
Farmers' Advocate & Home Journal
Farmers' Advocate & Home Magazine
Farm and Home
Farmers' Magazine
Grain Growers' Guide
Maritime Farmer and Co-operative Dairyman
Nor'West Farmer
Weekly Witness and Canadian Homestead

BUSINESS NEWSPAPERS
Bookseller & Stationer
Business Review & Maritime Retailer
Canada Lumberman & Woodworker
Canadian Cigar & Tobacco Journal
Canadian Finance
Canadian Furniture World
Canadian Grocer
Canadian Hardware Journal
Canadian Insurance
Canadian Music Trades Journal
Canadian Optometrist & Optician
Canadian Woodworker & Furniture Manufacturer
Clothier & Haberdasher
The Commercial
Contract Record & Engineering Review
Dry Goods Review
Druggists' Weekly
Financial Post
Footwear in Canada
Hardware and Metal
Le Prix Courant
Le Moniteur du Commerce
Marketing
Maritime Merchant
Men's Wear Review
Monetary Times
Motoring
Motor Trade
Phonograph Journal of Canada
Printer and Publisher
Retail Druggist
Retail Grocer & Provisioner
Trader & Canadian Jeweler
Western Canada Coal Review
Western Canada Contractor
Western Lumberman.
Women's Wear

RELIGIOUS AND EDUCATIONAL NEWSPAPERS
Canadian Churchman
Catholic Record
Christian Guardian
East & West
Northern Messenger
Pathfinder
Pioneer
Presbyterian Witness
The School
Teacher's Monthly

TECHNICAL NEWSPAPERS
Canadian Engineer
Canadian Foundryman
Canadian Machinery
Canadian Manufacturer
Canadian Railway & Marine World
Construction
Dominion Dental Journal
Electrical Dealer & Contractor
Electrical News
Marine Engineering
Municipal World
Power House
Sanitary Engineer

MAGAZINES
Canadian Forestry Magazine
Canadian Home Journal
Everywoman's World
La Canadienne
MacLean's Magazine
Motor Magazine
Needlecraft Companion
Saturday Night
Western Home Monthly
Woman's Century
World Wide

"Supply advertisers with full information regarding character and extent of circulation."

These are only a few of the conditions which have to be subscribed to precedent to admission to the Association, but they will give an idea of the high standard demanded.

There are already embraced in the membership of this Association a very large majority of the reputable and responsible publishers of the newspapers and magazines classed above, and it is believed that within a very short time, practically all that are eligible—all who can conscientiously endorse the Standards of Practice—will have been enrolled in our membership.

Canadian National Newspapers and Periodicals Association
Office - 70 Lombard Street - Toronto, Canada

LYONS MOTOR TRAILERS

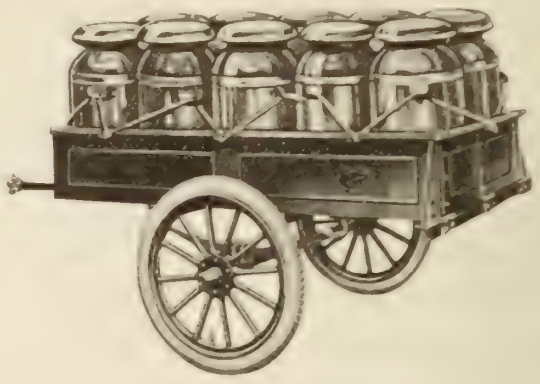
THESE trailers are made of steel and are designed for both commercial and pleasure service. The capacity is 750 pounds. The specifications are as follows:

Body, 72 x 46 inches and 12 inches deep. The wheels are 30 x 3 automobile wheels, with ball bearings. The tires are non-skid pneumatics, standard make. The axle is 1¼ in. The flooring is of wood, with steel protecting strips. High-grade automobile springs are used. The finish is dark green body with black wheels and trimming.

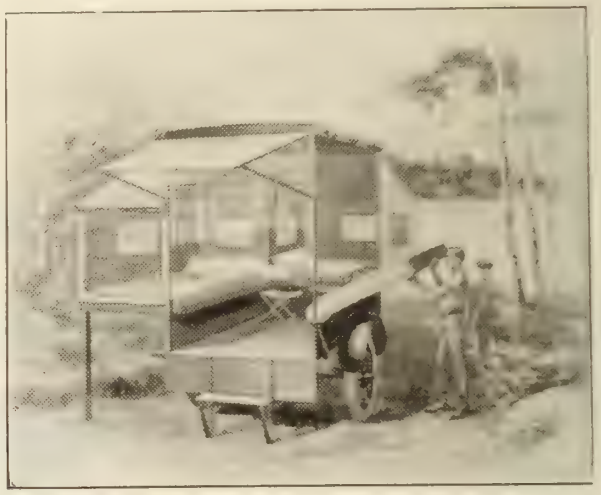
The trailers can be supplied for all commercial purposes with suitable equipment.

A special camping trailer is also supplied. This is built in four units. The top is a regular express top made of wood laths and covered with strong black duck material. The top is put on collapsible posts. The curtains on the top are removable and used buttoned together as a fly in the rear of the camp bungalow when the camp is set up. A lift bed with spring and mattress is supplied. This folds up to 9 inches thick, 6 feet long and 3 feet wide. The sides of the roof and ends of the left and right units are made with solid wood frame and laths covered with automobile top material, with window screens and curtains for weather protection.

Made by F. P. Lyons, Inc.



Lyons Commercial Trailer



Camping Trailer

OPEN NEW GARAGE

SCOTT BROS. are the proprietors of a new garage business at Gleichen, Alberta, and are handling all kinds of repairs.

J. I. CASE T. M. CO. TRACTOR SCHOOLS

THE J. I. Case Threshing Machine Co. will hold four tractor schools during the month of March. These schools will be held at Toronto on March 10, 11, 12; at Cornwall, March 14, 15, 16; St. Thomas, March 18, 19; and Chatham, March 21, 22, 23.

The courses will be conducted by experts from the J. I. Case factory and are open to everybody free of charge.

JOIN FORDSON TRACTOR CO.

J. G. TAGGART, principal of the agricultural school at Vermilion, Alberta, and A. Blackstock, who taught animal husbandry there and also had charge of the farm, have been appointed to positions with the Fordson Tractor Co.

An old man had been working on a farm since he was twelve years old. When he was eighty-three his young master suggested it was time he retired from active service.

The old man stared in surprise and said:

"Well, I've bin working on this farm seventy-one years now. I worked for your grandfeyther. I worked for your feyther, and now I'm working for you, and you wants to sack me. If I'd a-known it wasn't goin' to be a regular job, I'd never have taken it on."—Royal Magazine.

"Did you see Dusty Bill while you was East?" inquired Three-Finger Sam.

"Yes," answered Cactus Joe. "And I'll say that with all his money he's the same old sport, settin' into the swiftest game he can find."

"Playin' cards?"

"Yes. But not our kind. Bill and his folks have discovered a new game called 'Society,' played with visitin' cards. A whole lot of it depends on bluffin' and the ante runs up into the thousands." — Washington Evening Star.

MAYBE ADAM LAUGHED AT THESE

An English barrister, arguing before the criminal court, remarked with much solemnity to the justice: "My lord, there is honor among thieves."

The justice looked at him severely. "There is gold in sea water," he replied, "but it can't be extracted in profitable quantities. Go on, sir."—Edinburgh Scotsman.

* * *

The census taker entered a large garage in Louisville.

"How many people are working here?" he asked.

The proprietor shifted his Piper Heidsieck from starboard to port.

"'Bout half of 'em," said he.—Motor Life.

* * *

"Mother, did God make you?"

"Yes dear."

"Did He make me, too?"

"Of course, darling."

"Did He make the flies?"

"Certainly. He made everything."

The child bent over his toys muttering: "Dreadful fussy work—making flies."—Everybody's.

* * *

Diner—"What on earth is this broth made from, waiter? Surely it isn't chicken broth."

Waiter—"Well, sir, it's chicken-broth in its infancy. It's made out of the water the eggs were boiled in."—London Tit-Bits.

* * *

Pedestrian: "Have an accident?"

Motorist: "No, thanks, just had one."—Puppet.

* * *

Dear Sir.—I received your letter about what I owes you. Now be pachent. I ain't forgot you and as soon as folks pay me I'll pay you. If this was Judgment day and you no more prepared to meet your God than I am to meet your account, you sho going to hell.—Timken Magazine.

* * *

After a salesman had sold a big order of goods to the Scotch buyer for a store, he sought to make the Scot a present of a box of cigars.

"I'm sorry I cannot accept," the Scot said, "but there's a rule of the hoose that ye canna take presents from salesmen."

"Well," laughed the salesman, "I'll sell them to you for 5 cents, then."

"That's different now," the canny buyer replied, after taking a good sniff at the box. "I can buy my smokes where I please. I'll take four boxes."

* * *

He was sitting on the curb, looking at his car, and as we passed by, he greeted us so pleasingly that we must perforce stop and exchange a word with him, though he was a stranger.

"Car trouble?" we asked, idiotically.

"Lossa trouble," he acquiesced. "Gotta forty-horse power car there. An' thirty-nine o' them poor horses is dead. Terrible eek—eek—eek—" he seemed unable to get any further, and he hiccoughed.

"Terrible economic loss?" we suggested.

"Nope. Terrible eek-wine mortality!" he succeeded, triumphantly. "I had some o' this here good-natural alcohol, an' I'd otta've give some of it to the engine. But I drank it. An' now I only got one hoss left."—Cleveland Plain Dealer.

BUSINESS FOR SALE

GARAGE BUSINESS FOR SALE IN THE Ottawa Valley, population 3,000, good surrounding country. Stock and equipment about $4,000. Gray-Dort agency. Apply Box 100.

"BROUGHTON'S BLOWOUT BOOTS"

Bind Bad Breaks and Bruises Best. Non-skid, Flat, Hinged Steel. Successors to "Steeltire Clasps." Ends of treadplate give support like the buttresses of a bridge.

Catalogued and sold by almost all Canadian A.A. Jobbers and Dealers. Order from them or

THE GEO. H. BROUGHTON CO.,
126 Wellington St. W., Toronto, Ont.

References: Dun's or Bradstreet's.

Guaranteed by G.H. Broughton

Elevates by Air Blast No Chains Gears or Buckets

Move, clean and grade your grain in ONE operation; fill bins and cars without scooping and make more money by using the

Liberty Grain Blower

Elevates 30 feet—300 to 800 bu. an hour. Only ONE moving part. 6 H. P. runs it. One man can move it. Costs half price of oldstyle elevator.

FREE BOOK illustrated, tells how to increase grain profits. Send name for copy—a card will do.

LINK MFG. CO. Dept. 710
Portage la Prairie, Man.

AUTOMOBILE SPRINGS

The Guelph Spring and Axle Co.

Guelph - Ontario

Manufacture

AUTO SPRINGS
ALL KINDS
HIGHEST QUALITY

Sell the line already half sold

LISTER

Dependability and Reputation Turn the Scale

The farmer is buying the line he KNOWS to be absolutely dependable. He has known Lister reliability for 25 years. The Lister reputation tips the scale in the Lister dealer's favor—be a Lister dealer! Don't take a chance on poorly known lines. Get the Lister reputation behind you—and **get the business.**

Melotte Cream Separator—Lister Engine—Lister Milker—Lister Premier Cream Separator—Lister Silo Fillers, Grinders, etc.

Write now for literature and attractive agency terms.

R. A. Lister & Company (Canada) Limited

Stewart St. (near King and Bathurst), TORONTO
or at Wall St. and Portage Ave., WINNIPEG

Our Service is guaranteed to be entirely satisfactory to you and your customer. In addition we make it really profitable to you. Try us with the least of your orders and you'll eventually give us your best.

Pass your Auto and Truck Spring Troubles on to Us

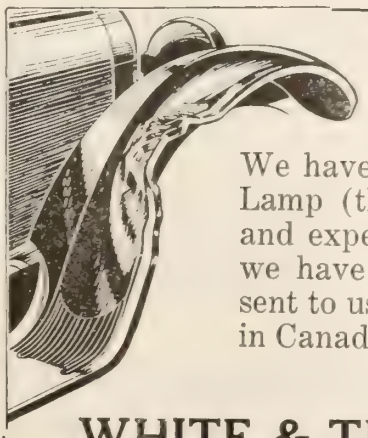
We can take all your spring troubles off your hands and give just as quick and accurate service as if done in your own shop.

COZENS & MAYNARD

Automobile and Truck Spring Service Station

4 to 6 Wood Street
TORONTO

Our service includes every type of Spring on every type of car or truck. We can fit any car and repair any spring. We, also, repair and build any type of special springs to order, and straighten chassis frames and axles on any car or truck.

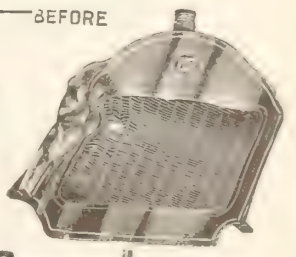


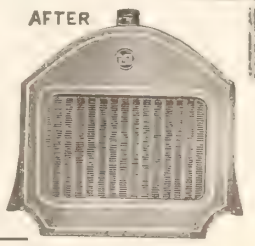
Don't say it's hopeless

We have never seen the damaged Fender, Radiator, or Lamp (that was repairable) that would baffle the skill and experience of our experts. For 15 years we have successfully completed every job sent to us. This is the oldest house of its kind in Canada and none but experts are employed.

We offer you prompt service.

WHITE & THOMAS, 210 SIMCOE STREET **TORONTO**





We Repair Radiators, Fenders, Lamps, Etc.

BURD Quick Seating PISTON RINGS

The outer edges—the Quick Seating feature—lap in quickly, producing a seat in perfect harmony with the hard glass-like surface of the cylinder, resulting in maximum efficiency for this type of ring in the minimum time. Seating is accomplished in about one-fifth of the time required for plain surface rings.

One Piece—Easy to Install

The slow, laborious "lapping in" and the annoying delay before the owner can use his car is eliminated. Burd Quick Seating Piston Rings have won the instant approval of mechanics and motorists. Millions of them are in successful operation. The simple Step-Joint gives the minimum opening and prevents leakage.

Sizes up to and including 4 inches, 75c
Sizes over 4 inches—up to and including 5 inches, 90c

Burd Ring Sales Co., of Canada
322 McIntyre Bldg. - Winnipeg, Man.

BURD HIGH COMPRESSION RING CO. *Rockford, Ill.*

OFFICERS OF THE RUBBER ASSOCIATION OF CANADA ELECTED

AT the business session of the Rubber Association of Canada, held in Montreal, Monday, February 14th, the following officers were elected: C. H. Carlisle, Toronto, Goodyear Tire & Rubber Company of Canada, Ltd., president; W. A. Eden, Montreal, general manager Canadian Consolidated Rubber Co., vice-president; C. N. Candee, Toronto, Gutta Percha & Rubber, Ltd., treasurer; John Westren, Toronto, Dunlop Tire & Rubber Goods Co., Ltd., assistant treasurer; A. B. Hannay, Toronto, manager and secretary.

The following were elected as directors: F. E. Partridge, Guelph, F. E. Partridge Rubber Co.; W. H. Miner, Montreal, Miner Rubber Co.; R. F. Foote, Merritton, Ont., Independent Rubber Co. of Ontario.

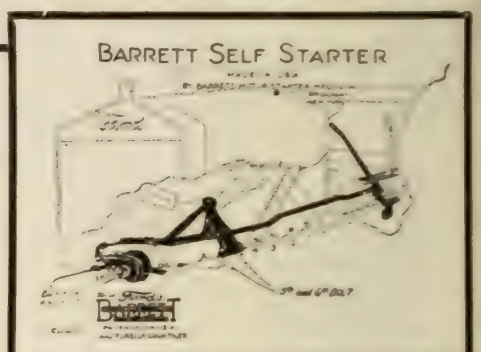
FIRESTONE NEWS

THE Firestone Tire and Rubber Company of Canada have appointed L. T. McGivern their district representative in the West. Mr. McGivern is well known to the tire and rubber trade in Western Canada. His headquarters will be at Regina.

H. A. Venard, sales representative, has just returned to the main office in Hamilton after a trip through the West. Mr. Venard reports that the open fall and winter has permitted the use of passenger cars and trucks later than usual with a corresponding stimulation for the tire and accessory business. Business prospects for 1921 are bright. The passenger car and truck are to-day business necessities and their use for business purposes will continue. With the sale of cars and trucks steady, tire and accessory sales will remain steady also.

Thousands of Ford Owners Will Want Self-Starters Now!

Now that Fords are being equipped with self-starters at the factory, owners of previous models will be anxious to have their cars brought up to date. There never was a time when self-starters for Ford cars could be sold with as little effort as at present. Especially does this apply to the BARRETT SELF-STARTER, which besides having many mechanical advantages, sells at



Cash Price: in Carton $35; Installed $40

The Barrett has the additional advantage of the Barrett Primer and Choker attach. is given free with every Barrett Starter. The starter is guaranteed for five years. Applicable to all Ford models including Ford trucks.

A big proposition that should be investigated by every live automotive man. **Write to-day for full particulars of agency to the Canadian representatives.**

IMPERIAL AGENCIES, 81 Victoria St., TORONTO

A financially sound and well-established jobber can secure Canadian selling rights.

BEAVER VULCANIZER

A Complete Vulcanizing Machine Equipped to Handle 3 inch to 5½ inch Tires

The Complete Plant

Tried and Tested in Actual Work

A Proven Success

Complete with bench last and gas burner
$350
f.o.b. Toronto

Fitted with oil burner $25 extra

This is a complete, compact unit with three-cavity head for vulcanizing 3 in., 3½ in., 4 in., 4½ in., 5 in. and 5½ in. tires. It is also equipped with 24 in. x 4½ in. tube plate.

The boiler is 6-flue cavity type in a conical stand and is fitted with most approved equipment in the way of safety valve, boiler gauge, filler, air vents, steam gauge, etc.

The plant includes nine sets of aluminum bead plates—an exclusive feature—light to handle, extra strong and aluminum is the best possible metal to retain heat.

The unit is compact, occupies little space and handles all sizes of tires. Steam generated—can also be used for other purposes such as in retread moulds. Complete instructions are given with each machine.

The "Beaver" has been proved efficient in operation in a number of garages and repair shops. It is not an experiment, but an acknowledged success and what has long been needed by most garage and repair men.

Glad to give all needed information to those interested.

The Beaver Pattern & Mfg. Co.
337 King Street West, TORONTO

GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

WE GIVE

"Quality and Service"

IN

TRACTOR and TRUCK STEEL CASTINGS

Joliette Castings & Forgings Limited

Head Office: Transportation Bldg., Montreal
Works: Joliette, Que.

Econometer Gives Definite Information on Gas Consumption

You don't guess —you know

As soon as gasoline commences to flow to the carburetor the Econometer registers. It shows the rate of flow in gallons per hour. If anything occurs to reduce efficiency of car the Econometer shows it immediately. Whether the trouble be in the choke, valves, carburetor, timer, compression, spark plugs, clutch, transmission, bearings, brakes, tires—so long as it affects the running of the car the Econometer tells the driver about it at once.

No need to guess as to whether car is running to capacity or not; with the Econometer the driver has definite, accurate knowedge **all the time.**

Mounted on the dashboard and connected between the supply tank and carburetor by means of copper tubing, the Econometer checks up on every drop of gasoline that goes to the carburetor. On car, truck or tractor it gives the driver instant notice of any irregularity that causes an increased consumption of gas. It makes the regulation of the motor a matter of fact rather than of guesswork. It detects slight defects before they can become serious. It not only saves gas—it saves the entire machine.

Section of Automobile Instrument Board showing Econometer conveniently placed alongside Speedometer.

The Econometer

is easily installed, in fact the driver can install it himself

Price $20.00

Complete

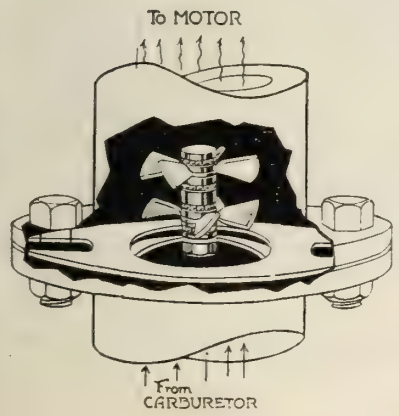
Including Strainer, Tubing, etc.

IT FILTERS YOUR GAS TOO

We are still open to consider representation in certain districts by dealers, garage men and repair men. Write us for full particulars.

REPUBLIC FLOW METERS COMPANY OF CANADA, LIMITED

145 Wellington Street West **TORONTO**



The VAPORISER

More Power
Greater Speed
Increased Mileage

A fuel saving of 25 per cent.

The Vaporiser is the greatest gas saving device known for all gasoline and kerosene engines. Inserted in the intake pipe it breaks up the fuel into infinitesimal particles before it reaches the intake manifold. Consequently action in the combustion chamber is instantaneous and complete. All waste is eliminated, every drop of fuel is converted into power.

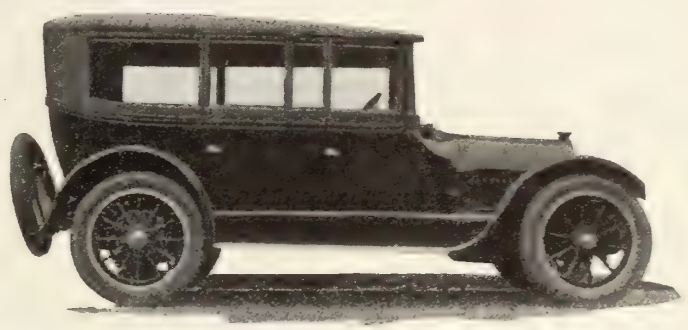
The Vaporiser will cause a saving of at least 25 per cent. in fuel—we **guarantee** it to do that.

You can sell the Vaporizer as an investment rather than an accessory—an investment that makes fabulous returns. You can demonstrate in actual dollars and cents what the Vaporiser will do on any car.

Get the cream of the business in your district by getting your agency now.

The Canadian Auto Accessories Company

70 Lombard St., Toronto



One of these Imperial Tops on the Streets of Your Town

If we could remodel just one car in each locality this Spring we wouldn't need to worry further about the future of our business. One Imperial Top going about the streets of your town would bring you many more remodelling jobs, and we could handle every one with the same despatch and give the same outstanding quality of work.

Bodies are built on all types of cars in our shops under the direction of two expert coach builders from Parker's, the famous old English establishment.

We will take any car of any make, so long as the frame is intact, and rebuild or remodel it with either closed or open top. We will alter any style body—closed to open or vice versa. We repair doors, upholstery and all parts of car bodies. In fact we can take care of "Everything above the Chassis."

You will find our proposition to dealers a very profitable arrangement. Write us for particulars.

Auto Top and Equipment Co., Limited

270 Dundas St. West **TORONTO**

"Everything Above the Chassis"

CANADIAN Motor, Tractor and Implement Trade Journal BUYERS DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

AUTO ACCESSORIES
Auto Top & Equipment Co., 270 Dundas St. W., Toronto.
Beaver Pattern Mfg. Co., 337 King St. W., Toronto.
Brown Engineering Corp., Limited, Toronto, Ont.
Burd High Compression Ring Co., Rockford, Ill.
G. H. Broughton, Toronto.
Canadian Auto Accessories, Toronto.
Canadian Linderman Co., Woodstock, Ont.
Cozens & Maynard, 4-6 Wood St., Toronto.
Guelph Spring & Axle Co., Guelph.
Hercules Bumpers, Ltd., 4 Spadina Ave., Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
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Ontario Plate Glass Co., Hamilton.
Pasznicki Bros., 21 Richmond St. W., Toronto.
Perfex Radiator Co., Racine, Wis.
Republic Flow Meters, Ltd., Toronto.
Shaw Auto Salvage Parts Co., Toronto.
The Canadian Raybestos Co., Peterborough, Ont.
G. Trussler, Orillia, Ont.
White & Thomas, Toronto, Ont.

AUTOMOBILE LENS
Garage Supply Co., 23 Richmond St., Toronto.
Keyes Supply Co., Ltd., Ottawa, Ont.
McKee Glass Co., Jeanette, Pa.
Ontario Plate Glass Co., Hamilton.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE BOOKS

AUTOMOBILE TIRES
Ames, Holden, MacCready, Montreal.

BARN EQUIPMENT

BEAN MACHINERY
John Deere Mfg. Co., Welland, Ont

BEET MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

BEARINGS

BINDERS
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING
The Canadian Raybestos Co., Peterborough, Ont.

BATTERIES
Canadian National Carbon Co., Toronto & Winnipeg.
The Canadian Hart Accumulator Co., Ltd., Montreal, Que.

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De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS
Joliette Castings & Forgings Ltd., Montreal and Joliette, Que.

CORN HARVESTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

CORN MACHINERY
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey-Harris Co., Ltd., Toronto.

CULTIVATORS
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey-Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
Weed Harvester Co., Belleville, Ont.

CUTTERS
Butterfield & Co., Inc., Rock Island, Q.

DAIRY SUPPLIES
DeLaval Dairy Supply Co., Peterboro.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
Swedish Separator Co., Montreal.

DIES
Butterfield & Co., Inc., Rock Island, Q.

DISCS

DITCHING MACHINES

DRILLS, TWIST
Butterfield & Co., Inc., Rock Island, Q.

DRILLS, GRAIN
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

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Gilson Mfg. Co., Ltd., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

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Gilson Mfg. Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

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John Deere Mfg. Co., Welland, Ont.

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Link Mfg. Co., Portage La Prairie, Man.
R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.
Warwick Machine Co., Ltd., Warwick, Que.
Weed Harvester Co., Belleville, Ont.

FEED CUTTERS
Gilson Engine Co., Guelph, Ont.

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Burlington Products, Ltd., Hamilton.

FENCING
Burlington Products Ltd., Hamilton.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

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Gilson Engine Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
S. Vessot & Co., Joliette, P.Q.

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John Deere Mfg. Co., Welland, Ont.

HAY LOADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

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John Deere Mfg. Co., Welland, Ont.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.

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HAY PRESSES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

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Garage Supply Co., 23 Richmond St., Toronto.
Keyes Supply Co., Ltd., Ottawa, Ont.
McKee Glass Co., Jeanette, Pt.
Ontario Plate Glass Co., Hamilton.

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Gilson Engine Co., Guelph, Ont.

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International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
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Cockshutt Plow Co., Brantford, Ont.
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DeLaval Dairy Supply Co., Peterboro.
R. A. Lister Co. (Canada), Ltd., Toronto

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Butterfield & Co., Inc., Rock Island, Q

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Canadian Oil Co., Toronto.

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Brown Engineering Corporation, Ltd., Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Lamontagne Ltd., Montreal, Que.

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Cockshutt Plow Co., Brantford.
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International Harvester Co., of Can., Ltd., Hamilton, Ont.

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Canadian Linderman Co., Woodstock, Ont.

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M. A. Kennedy Ltd., Toronto.
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J. I. Case Threshing Machine Co., Inc., Racine, Wis.

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M. A. Kennedy, Ltd., Toronto.

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Windsor Machine Tool Works, Windsor.

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International Harvester Co., of Can., Ltd., Hamilton, Ont.
J. I. Case Threshing Machine Co., Inc., Racine, Wis.
R. A. Lister Co. (Canada), Ltd., Toronto
Gilson Mfg. Co., Guelph, Ont.

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Eastern Canada Motor Truck Co., Ltd., Hull, P.Q.
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International Harvester Co., of Can., Ltd., Hamilton, Ont.

WATER BOWLS

WEEDERS
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WIRES AND CABLES

Butterfield

The many signs of the return of good business, especially in repairs and replacements, will naturally set you to considering your preparedness in the matter of tools.

When the busy days arrive, suddenly as they always do, you'll want to be fully ready.

Make your preparations now, and when you're buying

Drills
Taps
Dies
Reamers
Milling Cutters

assure yourself of economy, freedom from frequent delay, accuracy and general tool efficiency by seeing that every single tool is stamped with the Butterfield mark.

"The Tools You Buy Again"

Toronto Office: 220 King Street West
Montreal Office: 131 St. Paul St. West

Butterfield & Company, *Division*
Union Twist Drill Co.
ROCK ISLAND, QUEBEC

GILL
The Perfect One Piece Piston Ring

"Those Gill Rings brought me back"

"No other replacement on my car has proved as absolutely right as those Gill Rings you put on for me. I've another job now and I want you to do it."

The reputation Gill Piston Rings enjoy with car owners is reflected on the garage man who installs them.

The double step interlocking joint of the Gill Piston Ring is an absolute protection against loss of compression whether the cylinder is new or worn. In addition, Gill Rings are cast individually, which requires a much finer mixture of iron. Consequently there is greater elasticity. Gill Rings hold their shape better and maintain a uniformly snug contact with the cylinder walls.

The new Gill Piston Ring Size Directory is full of just the information you need. It is free to the trade. Send for your copy to-day.

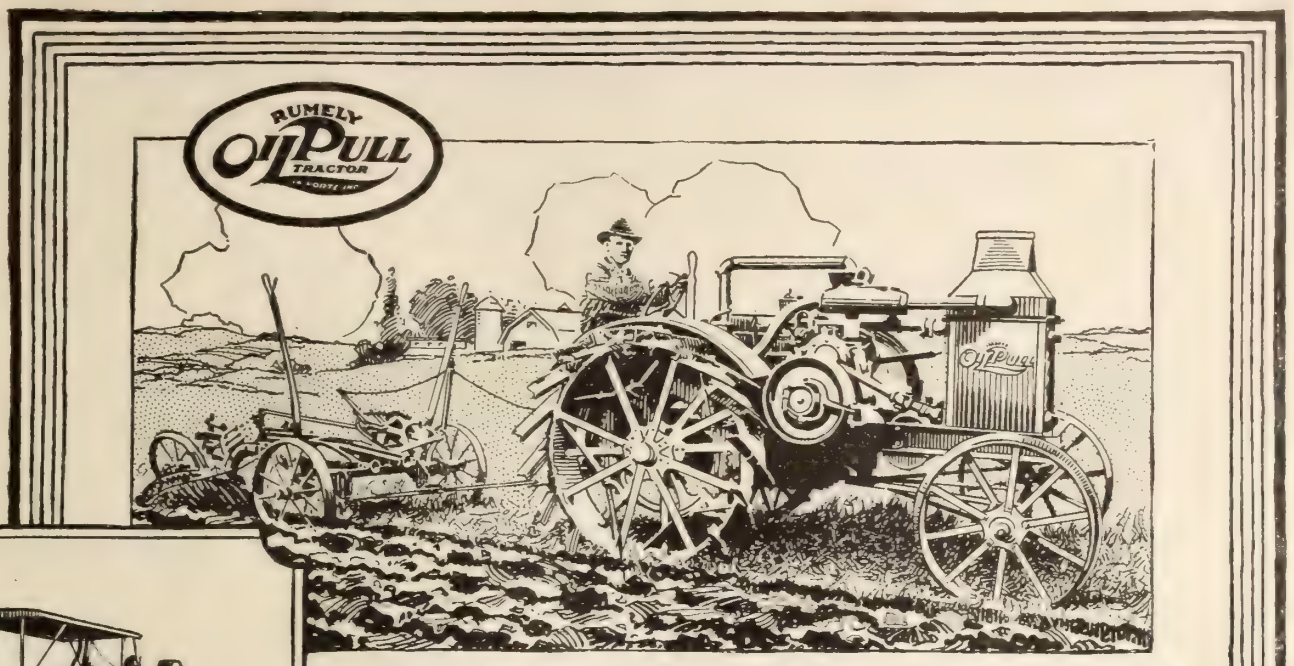
MADE IN CANADA BY

Brown Engineering Corporation, Limited

415-419 King Street, West, Toronto

Carried in stock at all Canadian General Electric Company's Distributing Warehouses.

Made in U.S.A. by Gill Mfg. Co., Chicago.



How much Power do You Demand in a Tractor?

The investment your customers make in a tractor is chiefly to secure increased power on their farms.

Power is the big demand — the power to plow more and deeper and faster — power to operate thresher, sheller, silo filler, etc.— power that saves horses, relieves help, speeds up the whole program of farm work — power that decreases production costs and increases farm profits.

And it is the great power and great *reserve of power* that enables the OilPull to do all *ordinary* farming jobs with ease and constant dependability. And, in addition, to be fully equal to the *extraordinary* jobs — to work over hills, to operate steadily in toughest sod, to thresh tough, wet grain.

Indeed, it is largely its great power—its ability to perform the hard jobs easily — that accounts for the unequaled length of life for which the OilPull is famous.

To all this is added an unequaled record of economy that makes the OilPull *cheapest in cost per year of service,* despite the mere selling price of any tractor.

It is guaranteed to burn kerosene under all conditions. It is oil cooled. Two distinct lubricating systems — mechanical and splash — operating simultaneously, insure positive lubrication.

This is the kind of tractor your customers are demanding—one with proved power, dependability, long life and economy. The tractor you handle should possess them in full measure.

Have you ever investigated the opportunity offered by an Advance-Rumely dealership? You should — today.

ADVANCE-RUMELY THRESHER COMPANY, *Inc.*
Calgary, Alta. Saskatoon, Sask. LaPorte, Indiana Regina, Sask. Winnipeg, Man.
48 Abell Street, Toronto, Ont.

Proving OilPull Power

After 8 years of hard plowing, threshing and road work, my OilPull is in such good shape that I would not trade it "even up" today for a new tractor of any other make. It always has more power than I need, even on the toughest jobs. It has given no trouble and I am positive it will easily last 15 years more.

H. L. Miller,
Cannon Falls, Minn.

I am using my OilPull tractor with a Jumbo plow, breaking through heavy scrub with ease, ten or twelve inches deep and doing the best work that has been done in this settlement.
The land is now ready for the drill and if we have an average crop the tractor will have practically paid for itself in one season's work.

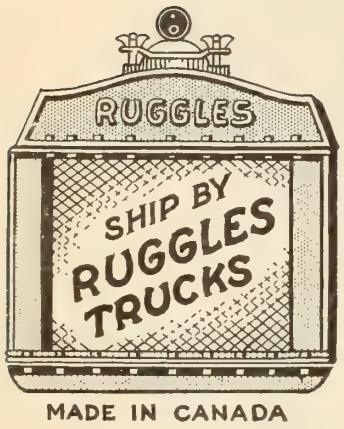
George Cooke,
Waldron, Sask.

ADVANCE-RUMELY

Ruggles Canadian Organization Solves Exchange Problem

Unsettled exchange conditions coupled with the prevailing high premium charged for American dollars demand that Canadian dealers look about for a suitable line of built-in-Canada trucks.

The range of truck models built by the Ruggles Motor Truck Company, Limited, London, Canada, is as follows:



MADE IN CANADA

RUGGLES	1 Ton Rapid Delivery (with Canopy Top)		$2,300.00
RUGGLES	1½ Ton Chassis and Seat		2,845.00
RUGGLES	2½ Ton Chassis and Seat		3,695.00
RUGGLES	3½ Ton Chassis and Seat		4,875.00

(Vestibule Cab, Stake, Express or Dump Bodies, specially designed as ordered)

Pneumatic tires extra, all bodies on request.

Then, too, our staff of designers and builders of special equipment for municipalities that are now motorizing fire-fighting, road construction equipment, etc., enables Ruggles truck distributors to sell successfully against any combination of trucks built for the Canadian field, without seeking any other truck affiliation.

Address Correspondence to Department 6

RUGGLES MOTOR TRUCK COMPANY, LIMITED

London - Canada

RUGGLES TRUCKS

CANADIAN

MOTOR, TRACTOR AND IMPLEMENT TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

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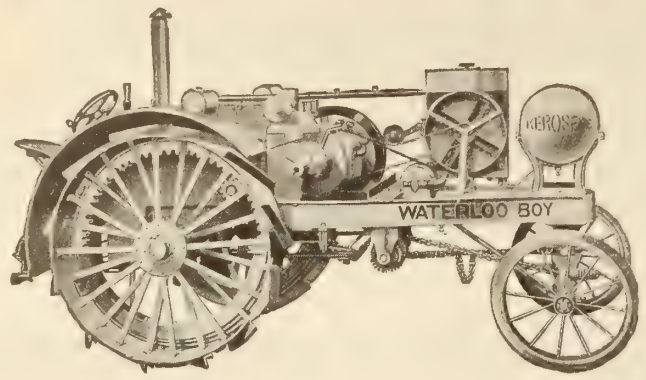
VOL. III, No. 4 TORONTO, APRIL, 1921 Subscription Price $2.00 Per Year

Silver Edge
Raybestos
Long fibre asbestos—woven solid—every fibre impregnated by a special and secret chemical treatment which vastly increases its ability to WEAR—why not use genuine Raybestos?
The Canadian Raybestos Co., Limited
Peterborough, Ontario, Canada

How the Sale of One Implement Leads to Others



"Waterloo Boy" Tractor

"Waterloo Boy" Tractors and John Deere Tractor Implements are a combination that work so well together that the sale of a tractor plow, cultivator or harrow is often a matter of showing the farmer how these implements save him time and labor, and mean better crops.

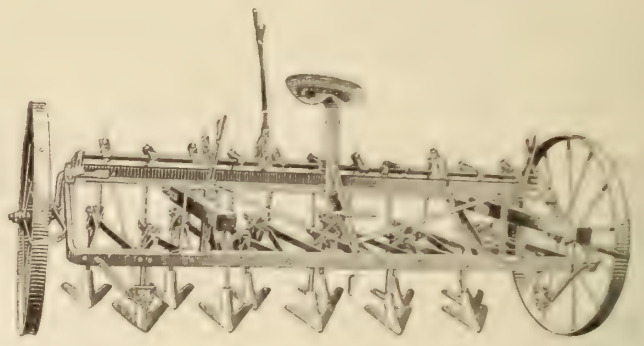
The John Deere Tractor Implements shown opposite have distinct advantages that appeal to the farmers:

John Deere Stiff Tooth Cultivators kill all the weeds that spoil a crop because the wide shovels give a large overlap.

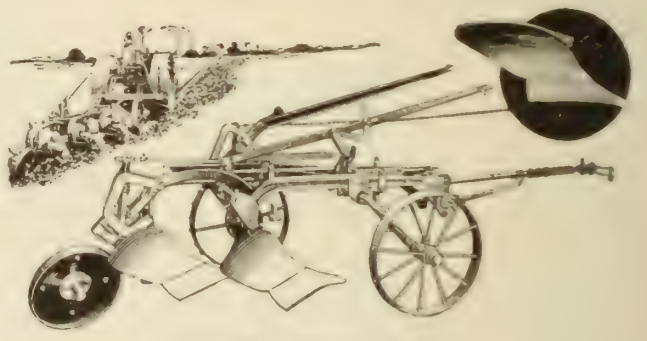
The flexibility of John Deere Disc Harrows permitting light or heavy pressure on the inner ends of the gangs is only one of the features of this harrow appreciated by every farmer.

John Deere Tractor Plows have the ability to stand the heavy strain of work behind a tractor. They cut the clean furrows that give good seed beds. The No. 40 Tractor Plow is built specially for Fordson Tractors and recommended by their manufacturers.

Because all John Deere implements have the same sales-producing features they are a good line for you to handle. Extensive advertising introduces John Deere dealers and John Deere implements to farmers everywhere. Live dealers find the John Deere contract profitable. Drop us a line for full particulars.



John Deere Stiff Tooth Cultivator



John Deere Tractor Plows

John Deere Disc Harrows

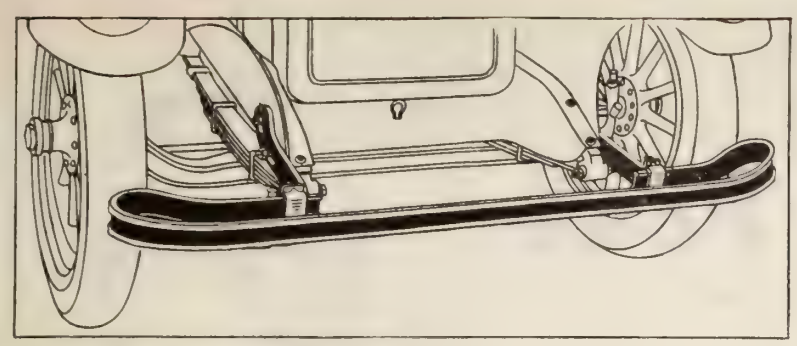
"This letter is to inform you that the John Deere No. 40 Plow has been approved by Mr. Henry Ford as a satisfactory implement to work in connection with the FORDSON Tractor. Please notify agents of this approval.

Very truly yours,
FORD MOTOR CO.
(Signed) EDSEL B. FORD, President."

John Deere No. 40 Tractor Plow built specially for Fordson Tractors.

John Deere Manufacturing Co., Limited

Welland **Ontario**



"HERCULES"

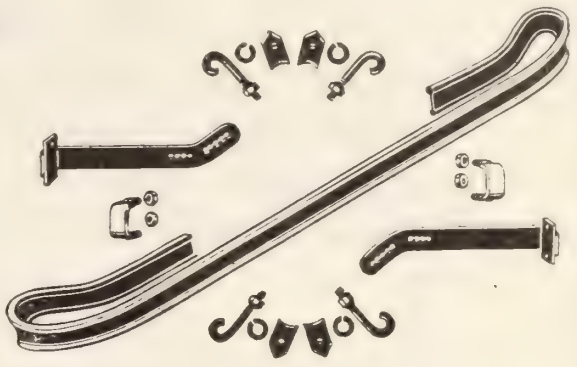
The Bumper that is going over big because it combines all the good qualities motorists ever asked for.

Resiliency

Shaped to absorb shock without transmitting it to the car.

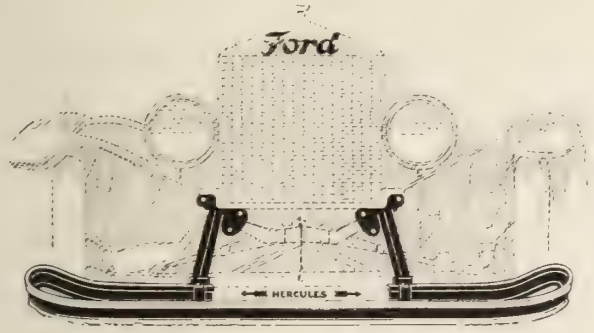
Strength

Designed to get great strength without great weight.



Beauty

A decided improvement to the ap pearance of any car, undoubtedly the best looking bumper on the market.



Fits any car

Easy to put on either front or rear, few parts, adjustable.

Get acquainted with "Hercules" and you will not want to handle any other bumper. Write for our attractive proposition.

Hercules Bumpers Limited

4 and 6 Spadina Avenue, Toronto

Econometer Ask Your Garage Man About It

Do not go away with the idea that this is merely some new gasoline device of which there are perhaps many on the market.

This is a Gasoline Flow Meter

Measures accurately the flow of gasoline as your engine idles or your car runs.

It is placed on your dashboard as shown below:

Section of Automobile Instrument Board showing Econometer conveniently placed alongside the Speedometer

The ECONOMETER is extremely sensitive in operation and indicates the slightest variation in consumption—so much so that the driver is notified immediately of any of the following troubles:

Excessive carbon in cylinder,
Binding Brake,
Slipping Clutch
Poor compression,
Soft tires,
Gasoline leaks.

The ECONOMETER is a beautifully-made piece of equipment with only one moving part. There is nothing about it to go out of order.

The ECONOMETER is easily installed and is supplied complete in a box.

Price $20.00 each, f.o.b. Toronto.

Includes ECONOMETER, Tubing, Extra Caskets, Bracket, Strainer and By-pass, Bolts and Screw.

WRITE FOR FULL PARTICULARS **Republic Flow Meters Co. of Canada, Limited**

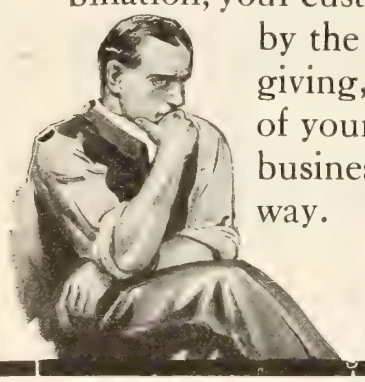
145 Wellington Street West, Toronto **Phone Adel. 6500**

I Am Selling You Increased Earning Power

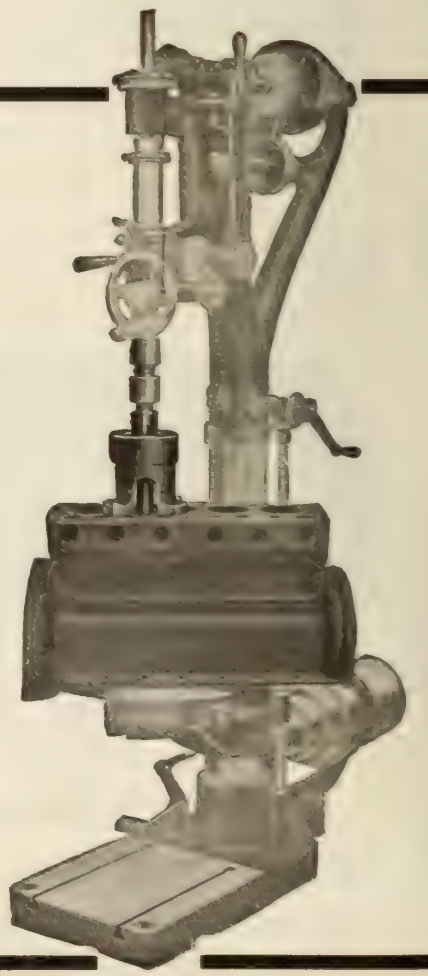
Mr. Garage Owner—

"Just sit down and figure this out for yourself. The moment your Universal Cylinder Reboring Tool arrives in your work shop the earning power of your establishment is considerably increased. Work that formerly went out of town is done right in your shop—the profit is all yours. In addition the saving of time for your customer increases his feeling of good will towards you, adds to your prestige and reputation of being a progressive business man.

"In addition to this and as extra good measure of service, when overhauling your customer's car, or when occasion demands, use only scientifically correct 'Wilkie' Piston Rings, which are made in standard and oversizes. With this combination, your customer is bound to be impressed by the quality of the service you are giving, and will make mental notes of your ability in conducting your business in a thoroughly capable way.



"Now if this 'dope' sounds reasonable to you drop a line to one of the jobbers mentioned below and I'll be along to tell you more about this compact, accurate tool. The illustration below shows a Universal Cylinder Reboring Tool as operated with power driven drill press. It can also be operated by hand."



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Border City Auto Supply Co., Windsor, Ont.
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Millen's B.C. Ltd., Vancouver.
Motor Products, Ltd., Winnipeg.
Wood-Vallance Ltd., Winnipeg.
Wood, Alexander & James, Hamilton.
The J. H. Ashdown Hdwe. Co., Ltd., Winnipeg.
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Great West Electric Co., Ltd., Winnipeg.
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Keyes Supply Co., Ltd., Ottawa.
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CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 | TORONTO, APRIL, 1921 | Number 4

The Dealer Who Goes After the Business Can Sell—Right Now

There Is a Large Volume of Business in Every Part of the Country This Year, But it is Waiting for the Gogetter Dealer—Be a Gogetter!

SOMEONE has said that fear is the greatest enemy of the human race. The automotive or implement dealer who indulges in pessimistic and fearful speculation regarding his business just now is a menace and an enemy of the industry he represents. True, there have been seasons in the automotive and farm machinery industries that have held greater promise of big business than the present season seems to hold, but when we get down to study the matter thoroughly and employ some of our God-given faculties the situation is not only possible, but is very promising for business.

This is especially true in the various farm machinery lines. Dealers who have gone out after business in the right way have sold as many machines this season as they did in corresponding season of last year, and in some cases have sold from 15 to 25 per cent. more. This is the go-get-it year and the go-getters are satisfied with their efforts. Implement dealers in various parts of Ontario seen by M.T.I. report good business.

Dealers Who Have Sold

One dealer in the heart of the Niagara fruit belt said that at the beginning of the year he realized if he wanted to do good business it would be necessary to employ every sales effort his organization was capable of. The first thing he did, instead of reducing his sales staff, as many concerns have done, was to engage another salesman. The next step was a thorough and systematic circularizing of his territory. Then followed newspaper, advertising, which was backed up by a sales canvass. Four salesmen, including the proprietor himself, thoroughly drag-netted the territory, with the result a surprising number of sales were brought home. The business done by this enterprising farm machinery concern during the months of January, February and March averaged between six and seven thousand dollars a month, an increase of 20 per cent. over the corresponding months of last year.

Another implement dealer in the same section, but in a different town, said that his books showed more sales in the first three months of this year than in the same months of the previous year. Both of these dealers report that their best selling line this year so far has been cream separators and other dairy and household equipment.

Automobile Industry Sound

In the automobile industry the past month has brought forth many indications of an early resumption of buying. The motor shows held at Montreal, London, Ont., New York, and Chicago, recently gave the slowly improving sales situation a decided acceleration. Hard work and plain horse sense are breaking the buying resistance, and will continue to break it.

In the smaller towns the dealer sells principally to the farmer. In spite of the fact of reduced grain prices the farmer is, broadly speaking, in a sound financial position. But he is economizing. He is refraining from buying in certain sections, believing it is economy to do so. The dealer who is not prepared to show the farmer where he will economize and make more profits by the purchase of a certain machine, is, in many cases, only wasting his time when trying to sell.

Machinery Needed

The farmer is in need of implements, tractors, automobiles and trucks and will buy them, as the dealers already spoken of have experienced, and those dealers who are willing to work hard and can show the farmer the way to economize are going to get the cream of the business.

As we have stated already, the farmer will buy machinery and cars this spring and summer. It makes no difference whether times are dull or prosperous, food must be raised, and in order to do this on a modern production basis the farmer must use the most up-to-date equipment. The great bulk of the equipment needed to produce next year's crops has yet to be sold. Somebody must sell it, and it is a thousand to one wager that the dealer who, whether his establishment is large or small, merchandises intensively is going to be the man.

Elsewhere in this issue we publish several articles from which the dealer will derive much benefit by a careful reading. Special emphasis is laid on the necessity of analyzing to sell, and selling to reduce costs.

One article of particular importance is, "Keeping Track of Your Business," by Elton Johnson. The importance of keeping a proper record of his business cannot be over-estimated by the dealer. He is primarily in business to make money, and the only sure way to find out whether he is making money or losing it is to install an adequate accounting system. That holds true at all times, but at a time like the present, when business conditions are such that the dealer has to figure everything very closely, a proper accounting system is an absolute necessity.

THE H—— WE CAN'T!

This Dealer is Too Busy to Be Pessimistic

He Says:—"Who Has Time to Talk About Blue Business When There Are So Many Machines Required, and So Much Work to Be Done?—I Have Found No More Difficulty Selling This Year Than Last Year"

"PSHAW! So far as my experience goes there isn't such a thing as a farmers' buying strike! Business with me has been good right along since last October. How do I get it? Why, I just go after it all the time and never 'let up.' I haven't noticed any difference in the farmers' attitude this year from any other year. The farmer isn't what one would call an easy man to sell at any time. At least I assume as much and go after him hard whether times are good or just fair; and, in spite of all the blue ruin in the newspapers, I have sold more goods this year so far than I did in the same time last year. So, since you ask me, I would say that business is good."

The speaker was H. E. Hill, implement and power farming dealer, of Welland, Ont., a big, breezy, smiling faced man, whom everybody calls by his first name, Harry. Harry believes in making friends wherever he goes, and to this end his jovial countenance is a potent factor. He just can't feel pessimistic about anything. He says in effect: **"What's the use of feeling blue when there are so many farmers in need of machinery? And, besides, who has time to 'tell the world' that the country is going to the 'bow-wows' when there are so many prospects to talk to and so much work to be done?"**

Knowledge of Farming Conditions

Mr. Hill started to sell farm machinery a little over two years ago, and has in that time undoubtedly built up a very healthy business. Although he has been selling implements for only two years, he has been in close touch with farm equipment and farm operations all his life, having been born and raised among the broad acres. His intimate knowledge of farming, and of the conditions under which the farmer has to operate, is, he maintains, a great help to him.

Even though Mr. Hill persists in being optimistic and cheerful, he is not like the ostrich, who, when danger is near, hides its head in the sand and thinks it is safe. On the contrary, he is alive to the dangers and pitfalls of modern business, and, to circumvent these, he arms himself with system, foresight, hard work and an intelligent service policy.

H. E. Hill's Implement Store at Welland, Ont. Mr. Hill is standing second from the left.

The Premises

His storeroom is unique among implement stores. It was built for a garage and was used as such for a few months. Consequently it is fitted up along modern lines. There is a fine showroom, 20x30, with a full plate glass front. At one side there is a runway leading into the repair shop, which Mr. Hill uses for storing and assembling the larger machines. In the showroom and in the window samples of most of the lines carried are on display. The stockroom, where repair parts are kept, is 8 ft. x 12 ft. Parts are kept in bins around the four walls, each bin being ticketed with number of bin and name of part. There is a stock sheet for keeping track of parts. On this sheet is printed number of bin, name of part, quantity, list number, and price. Parts are ordered and sold from this sheet. When a part is sold it is marked off on the sheet, and when an item gets down to a certain number, say 4, more are ordered. In this way an accurate record of parts is kept and no item is allowed ever to go out of stock.

Mr. Hill has an office and believes it to be his duty to be there most of the time, because, as he says, a customer usually wants to see the "boss" when he comes in to buy, to get information, or advice. He keeps a man on the road all the time, and in the busy season employs two. These men canvass the territory thoroughly and keep in close touch with prospects the year round.

Full Line Carried

A full line is carried, embracing everything from wheelbarrows to tractors and threshing machines. For some reason or other this enterprising dealer finds his "best sellers" this season are cream separators and steel fencing. Steel fencing is sold in large quantities and satisfactory profits are made. It is a good winter and early spring line, Mr. Hill finds, due, no doubt, to the fact that the farmer has more time then to look around to see what his fences are like and to have them repaired. Fencing is also sold in quantity just after seeding time and before the busy summer and fall.

Personality Counts

"Personality in selling farm machinery counts a great deal," said Mr. Hill. "If a man is sincere in his dealings with the farmer and backs up everything he promises he will soon make a host of friends. It is also a good plan to get on familiar terms with prospects and call them by their first names. A timely and interested inquiry about the family, I have noticed, is always appreciated. It isn't necessary to be selling or trying to sell a man something to exchange these courtesies; the wise dealer and business man will always take a real interest in his customers.

No Price Cutting

"There are two hard and fast rules which regulate our policy in every transaction. These are: Sell only the best goods, and sell them at one price for all. We rigidly adhere to that policy under all circumstances. Sometimes we meet with a farmer who balks at our policy of "one price for all," but we have always been able to make him see the wisdom of it.

"Not long ago one of my salesmen sold a farmer an engine and saw. The deal amounted to a few dollars over $500. The farmer said he would be satisfied to close the deal if my salesman would deduct the extra dollar or so and make the even $500. My salesman, of course, in accordance with our policy, refused, but told the farmer if he wanted to satisfy himself he could telephone me at the office for my ruling. The farmer did so, and on my confirming the salesman's price and policy he was inclined to be angry at what he termed our stinginess. I argued with him like this: 'Now, supposing you went into a store and bought a standard article at the regular price you probably would come away satisfied that everything was as it should be. But, supposing in the course of a day or so you should meet a neighbor, who, on being informed of your purchase, told you he had bought the same article at a lower figure, you would be pretty 'sore,' wouldn't you? 'I should say I would,' he said. 'Now, I replied, it is to avoid such a thing as that we have adopted our one price policy.' He saw the logic of the argument and closed the deal at our price without more ado. To-day he is one of our best customers."

Service Policy

Mr. Hill's service policy is very simple. It can be described in two words, "Satisfy customers." He is not worried so much about who pays for the service as he is about supplying a customer with a satisfactory machine. He says a little accommodation given to a prospect occasionally will never hurt any dealer. He believes in "casting his bread upon the waters" and is convinced it "returns to him after many days."

In Business to Make It Pay

While he would do a great deal to create a satisfied customer, he is in the business to make it pay. He handles only the best goods and those that pay him a fair profit. He does not believe in being held down to a "full line" by any one manufacturer. The implement dealer, in his opinion, should be as free to conduct his business along his own lines as any other class of merchant. He realizes, of course, until the implement dealer gets to the position where he can operate on a cash basis, he will be more or less tied down.

Mr. Hill's line covers practically everything a farmer requires. It includes all field implements, engines, tractors, cream separators, milking machines, ensilage cutters, spreaders, washing machines, barn equipment, water systems, wagons, buggies, fencing, gasoline, oils, etc., etc. He keeps a gasoline pump in front of the store for the convenience of his motoring customers.

Speaking about publicity Mr. Hill said: "In regard to publicity I think this is best accomplished for the implement dealer by satisfied customers. We use the local papers of course, but, after all, they only reach a small percentage of our real customers. I am inclined to favor the circular letter system of advertising because it is more personal than the newspaper, and goes right to the prospect and addresses him individually. When all is said and done about advertising, however, one satisfied customer is worth far more to a dealer than any amount of silent advertising. A satisfied customer not only advertises for us, but he invariably sends several prospects to our door educated to the point of buying. So in all our dealings our chief aim is to satisfy."

Farmers Can and Will Buy Tractors But——

The Dealer Must Show Where They Will Economize in Labor and Costs and Increase Production by Doing So

By ARNOLD P. YERKES

NINETY-NINE times out of a hundred when a business man buys a machine of any kind, he buys it because he believes it will increase his profits. He may expect it to accomplish this result either by reducing the expense of the operation which it performs, compared with what the operation costs him at present, or expect the machine to produce a greater quantity of a certain article than his old equipment, or, again, he may expect the new machine to do a better quality of work than the one he has been using and hence improve the quality of his product. Any one of these reasons or any combination of them would be sufficient in many cases to sell a machine to a manufacturer. The same principles hold true in the matter of selling a tractor to a farmer. It may occasionally happen that a farmer will buy a tractor simply because he wishes to appear up to date, but such instances are exceptional. In almost every case when a farmer pays down the amount of money required to buy a tractor or obligates himself for such an amount, he does it because he has become convinced that it will pay him to do so.

The tractor dealer should always keep this point in mind because in the final analysis it is the one conviction which must be driven home to the prospect before he will place his name on the dotted line. Of course, if the prospect when he reaches the dealer has already been convinced that it will pay him to buy a tractor, all the dealer needs to do is to convince him that the particular make of tractor which he handles will be the best one for him to buy, but prospects of this kind are much scarcer this year than last and, as has repeatedly been pointed out, the dealer who disposes of tractors this year must **sell** them, and to do this he must be able to point out to a farmer just why it will pay him to buy a tractor.

Make No Exaggerated Claims

In advancing arguments along this line, the dealer should be careful not to make the mistake which many dealers, and even some manufacturers, have made, in claiming low operating costs for their tractor which could not possibly be accomplished. For example, it is not at all infrequent to hear the claim made by a tractor dealer or manufacturer that the cost of plowing an acre of ground is a certain figure, which represents merely the cost of the fuel and oil which would be used in this work. Now there are very few farmers who would be gullible enough to swallow such a statement. They know very well that the cost of operating any machine must include the depreciation on the machine, repair charges, expenses of the operator, as well as overhead charges, which, in the case of an expensive machine like the tractor, are quite an item because of the interest on the investment. This latter item will not be overlooked by a farmer when he is giving a note for part of the cost on which he must himself pay interest.

However, there is no need of a dealer making any such claims for his tractor, provided he is handling one which is reasonably well built and efficient, for it can easily be demonstrated that most field operations can be done more cheaply with a tractor than with horses even when the items of interest, depreciation, operator's wages, and other expenses are considered. The dealer should not only be prepared to give accurate figures on this point, which can be checked and verified by the prospect, but should be able to refer the prospect to customers in the neighborhood whose actual experience proved his assertions.

Tractor Can Stand on its Merits

The farm tractor has now been in use long enough and with such a degree of success that there need be nothing theoretical in the claims made for it. There are thousands of farmers in Canada and the States who have bought their second and third tractors and, in the cases of some large farms the number of tractors bought has been constantly increased until it has reached a dozen or more. Now there are very few farmers who would buy a second tractor after one has been worn out or who would buy additional tractors before the first one is worn out unless their experience had proved to them that the tractor did the work more cheaply than it could be done with horses. It is useless to argue that some men would rather run a tractor than drive horses and that they would pay more for this privilege. This argument carries no weight whatever in the case of the many large farms where the manager has bought tractor after tractor to be operated by hired hands, the manager, himself, never running a machine. If horses would do the work cheaper, these managers would buy horses and hire men to drive them. Their experience has shown that the tractor will not only furnish power at a lower cost per horse power hour than will animals, but that there is also a saving in the amount of man labor required to cover an acre of ground, regardless of the implement used, and, furthermore, that the quality of the work is better and the rapidity with which it is carried forward, especially in rush seasons, is of sufficient value to justify the use of tractors even though they did not possess the other advantages mentioned.

Upkeep of Tractor and Horse Compared

Every tractor dealer should be familiar with the cost of keeping a horse in his neighborhood, based on the prevailing prices of grain and hay, and he should also have an idea of the other expenses involved in maintaining a stable of horses.

Figures which have been collected by various agricultural colleges show that the average farm horse eats over 100 bushels of oats or its equivalent each year and slightly more than three tons of hay or its equivalent. The fact that these crops are grown on the farm does not mean that it costs nothing to feed a horse, as some farmers would argue. These crops, after they are grown, have a market value, and the farmer if he feeds them to work stock must assume that they are worth the prevailing market price less the cost of delivering them to market. This means that even at the present rather low prices for feed, the item of horse cost alone will run from $75 to $100 in most sections. When to this figure is added the interest on the amount of money invested in the horse, depreciation based on a 10-year working life, interest and depreciation on the harness, cost of shoeing, labor required in feeding and caring for the horses, veterinary fees, taxes, etc., the cost of keeping a single work horse on most farms will be approximately $150 per year under ordinary conditions and in many cases even higher than this. Here again, it should be pointed out that in figuring the interest and depreciation on a horse, his market value is the only figure which can be legitimately used. Some farmers take the attitude that if they raise their own colts, their work stock really costs them nothing but the expense of raising the colts, but in considering whether a tractor will do their work cheaper they must take into consideration what these horses would bring if placed on the market, for if they could be sold at $200 per head, the farmer is losing whatever profit it would be possible to make from their sale at this figure if he continues to use them; and he must consider this point in calculating what it costs him to do his work with horses.

In comparing the cost of doing farm work with a tractor or horses, the items of expense which should be considered for the tractor include fuel, lubricating oil, interest, depreciation, repairs, labor, and any other incidental overhead charges. If a special shelter must be built or maintained for the tractor, this is a legitimate charge, but in most cases the housing cost of the tractor is only a fraction of that required for its equivalent in horses and their feed. As this is a difficult item to compare accurately, it may safely be passed over with the knowledge that its non-consideration in any comparison is favorable to the horses.

Tractor Maintenance

The cost of operating a tractor per day depends considerably upon the number of days it will be used each year as the overhead charges of interest and depreciation must be divided by the number of days used in order to learn these charges for each day's work. Every dealer can figure out for himself the interest and depreciation on the tractor he is selling, the approximate amount of fuel and oil required per day, etc., and thus be prepared to show a prospect exactly what it will cost hm to run the tractor per day, and this, divided by the number of acres covered per day, will give the cost of any operation. In preparing such figures, the dealer should be conservative and not assume the life of the tractor at more than six or eight years, even though he feels confident that it will last much longer than this. Figures furnished by experienced tractor owners have placed the average life of the modern farm tractor at about eight years, but, in order to be on the safe side, a dealer would do better to use six or seven as the basis for his calculations. Repairs should not exceed over five per cent. of the tractor's original cost. During the first year or two, it may not amount to even a small fraction of this figure, but experience has shown that repairs usually amount to from four to five per cent. annually over the entire period of its life.

When all the items of expense connected with horses and tractors are considered and the wages of the driver or tractor operator are added to the daily cost, it will be found that in almost every case the actual cost of plowing an acre of ground is less with a tractor than with horses, and this fact is verified by thousands of tractor users. But this is only a part of the story. There are very few grain growers who do not have use for more or less belt power at some season of the year and if they do not own a tractor of their own, they must hire a custom rig to do this work. By having their own tractor, this expense is reduced considerably and this item, of course, is quite a point in favor of the tractor. To this can frequently be added the saving of considerable man labor.

The points mentioned are amply sufficient in most instances to justify the purchase of a tractor, and in numerous cases the horses which can safely be dispensed with after the tractor is bought will very nearly pay for the machine, while it is the exception to find a good-sized farm on which the actual cost of maintaining horses which the tractor would displace would not exceed the cost of operating the tractor for a full season.

In view of the facts above presented, there is no reason why every tractor dealer should not be prepared to give his prospects reliable and conservative figures showing the comparative cost of farm work with horses and with the tractor and thus convince them that the purchases of a tractor, even at prevailing prices for hay and grain, will be a very profitable proposition under most conditions.

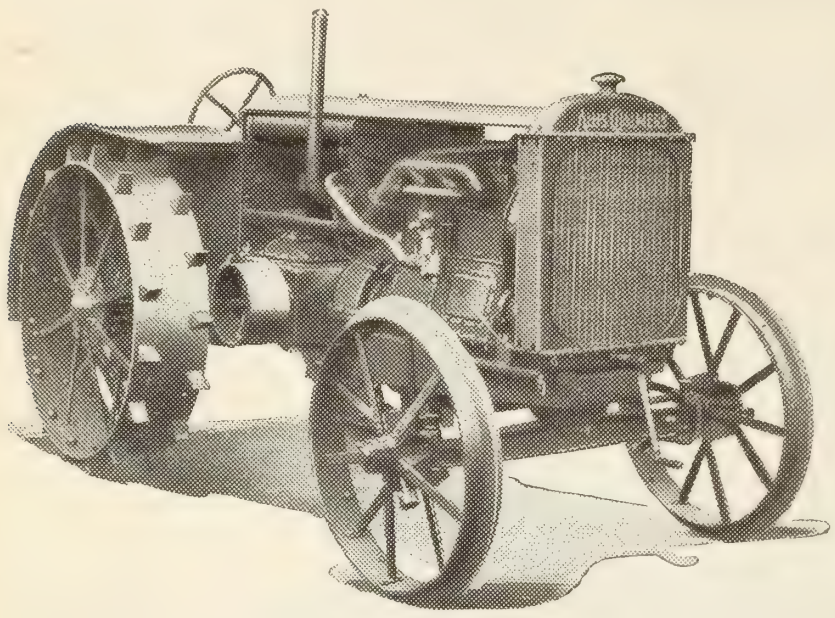
The farm tractor has now been in use long enough and with such a degree of success that there need be nothing theoretical in the claims made for it.

Two New Tractors and a New Truck

Huber "Super Four" Tractor

THIS is a three-plow tractor with a drawbar rating of 15 h.p. and a belt pulley rating of 30 h.p. Under favorable conditions, the makers claim, it will develop 40 h.p. and will pull three plows easily in any soil.

The engine is a Midwest four cylinder cast in pairs, with overhead valves and detachable cylinder head; bore, 4½ inches; stroke, 6 inches. Lubrication is obtained through the force feed system, and cooling by centrifugal water pump.



Allis-Chalmers 12-20

In the transmission, cut steel, heat treated gears running in an oil bath are used.

The crank shaft is heat treated and ground to size; the main and connecting bearings are three inches in diameter. The crank shaft is drilled its entire length and a continuous stream of oil is pumped through it under pressure. There is an opening into every journal where the oil is forced into the bearing.

The deck of the new Huber is convenient and roomy. The steering wheel, clutch and gear shift levers, spark and fuel control are in the natural position for easy operation, the makers say, and the oil gauge circulating pump and fuel supply are all under the driver's eye. The steering wheel is provided with a locking device, so that the driver can permit the tractor to be guided by the furrow. The transmission and all moving parts are enclosed to protect them from dust and dirt.

The frame is a bottle neck type, and owing to its construction it is possible to mount the radiator lengthwise. Other specifications briefly are as follows:

Wheelbase, 91 inches. Total length, 150 inches. Total width, 82½ inches, and height, 69 inches. Weight approximately, 6,000 pounds. Diameter of rear wheels, 60 inches; width, 10 inches. The front wheels are 46 x 4 inches. Carburetor, Kingston; ignition, Kingston, high tension, impulse starter; governor, enclosed type; clutch, Huber disk; bearings, Hyatt roller and Gurney ball bearings. The fuel used is gasoline.

This tractor is made by the Huber Mfg. Co., Marion, Ohio.

The Allis-Chalmers 12-20 Tractor

RESERVE power, long life, accessibility and simplicity are some of the claims made by the Allis-Chalmers Mfg. Co. for their new 12-20 tractor. It is of the four wheel type with unit frame, where the engine flywheel housing bolts to the transmission and rear axle housing. The transmission of the new model is similar to the Allis-Chalmers 18-30, the first reduction coming through a pair of bevels. The first cross shaft carries the high and low gear pinions, one or other of which meshes with the large gear on the second cross shaft, in the centre of which is the differential, and at the outer ends the final drive pinions meshing with internal gears, enclosed in a dust-proof housing. Hyatt roller bearings are used on the first and second shaft and in the rear wheels.

The motor is a four cylinder, vertical, valve-in-head type, cast en bloc, with 4⅛ in. bore and 5¼ in. stroke. Normal motor speed is 1,100 r.p.m. The expanding shoe type clutch is used. Speed range is from 2½ to 3¼ miles an hour and the total weight is 4,400 pounds. Other dimensions are: length, 11 ft. 3 in.; width, 5 ft. 6 in.; height, 5 ft.; wheelbase, 78 in.; minimum clearance, 13 in.

J. I. Case Plow Works Announce New Farm Truck

THE J. I. Case Plow Works Co., of Racine, Wisconsin, recently placed on the market a two-ton truck designed primarily for farm use. Owing to the fact that this truck will be used almost entirely on country roads and in open fields, the makers state that every precaution has been taken to protect against dirt and grit. It is equipped with pneumatic tires and has a governed speed of 15 miles an hour, and, it is claimed, a speed of 20 m.p.h. can be easily obtained.

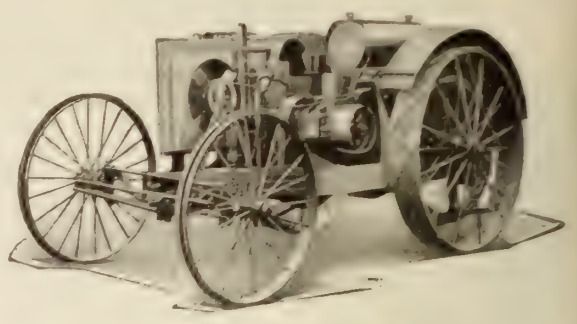
The engine is practically the same as that used in the Wallis tractor. It is of the four cylinder, valve-in-head type with removable cylinder head. The bore is 4¼ in. and the stroke is 5¾ in. The motor operates at a normal speed of 900 r.p.m.

The transmission is ball bearing throughout, is completely enclosed and runs in a bath of oil. Three speeds forward and one reverse are provided. All gears have a 1 in. effective face, and on high gear the drive is direct. The rear axle is a Torbensen internal gear drive; gear ratio is 8 to 1. The clutch, which is enclosed, is of the twin disc type, and is held in engagement by a spring. The Ross steering gear is used and can be removed from the truck without removing the motor, and vice versa.

Lubrication is by combination pump and splash. Ignition and lighting is by Eisemann magneto-generator and there is a battery for lights when the motor is not running.

The weight of the truck complete with the body, cab, fuel, and water, is 5,500 lbs. The loading space measures 66 x 120 inches inside the stakes.

One feature in this truck which the farmer will welcome is the belt pulley, which, with the belt power take-off, is mounted at the front of the truck. The pulley at crank shaft speed gives a belt speed of 2,400 r.p.m. It is mounted directly in front of the radiator on the driver's seat for conveniently lining up belt-driven machinery.



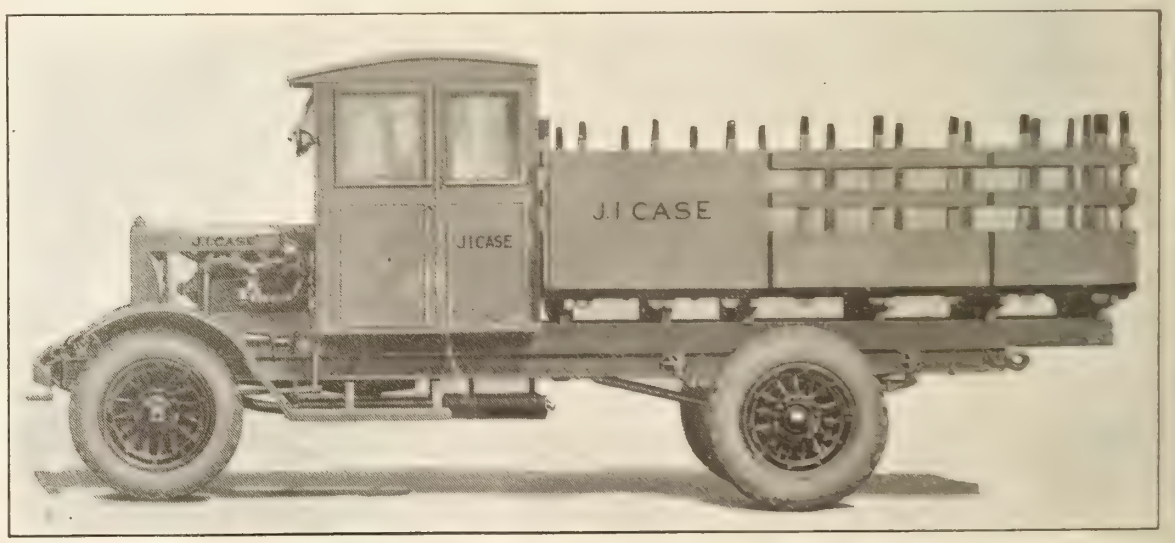
Huber "Super Four"

Specifications of Case 2-Ton Farm Truck

CAPACITY—2-ton.
SPEED—15 to 20 m.p.h.
ENGINE—Four cylinders 4¼ x 5¾.
CLUTCH—Twin disc.
SPRINGS—Half elliptic.
REAR AXLE—Torbensen gear drive.
TIRES—Front 36 x 6, rear 38 x 7.
WHEELBASE—144 in.
WEIGHT—5,500 lbs.

Merry Garden Cultivator

THE Atlantic Machine and Mfg. Co., 429 Prospect Avenue, Cleveland, Ohio, are manufacturing an auto cultivator and mower, which will do nearly everything round the garden but heavy ploughing, it is stated. It is designed to accommodate all the Planet, Jr., attachments, and will harrow, cultivate, weed, rake and mow. The makers claim that it will do the work of four men with hand machines, and can be worked within half-inch of the plants. A pulley can be attached to the motor and utilized to run churn, washing machine, water pump or other work round the house or barn that is suitable for a 2 h.p. engine. The lawn mower can be attached ready for use in two or three minutes. The engine is a one cylinder vertical, developing 2 h.p., with high tension magneto, using neither batteries nor coil. Gears are incased in dust proof housing, and the gasoline consumption is one gallon for 4 to 8 hours' running, according to the nature of the soil and work. The length over all is 70 inches. Width outside of traction wheels 17 inches. A 30-inch lawn mower with five blades or 31-inch with 4 blades can be attached to machine, or 3-row seeder, adjustable to plant from 10-inch to 20-inch rows, both as extras.



New J. I. Case Plow Works' 2-ton Farm Truck

Keeping Track of Your Business

The Success of the Garageman May This Year Depend on How Carefully He Keeps Records of All His Transactions—Day by Day Knowledge of the Business Essential

By ELTON JOHNSON

TO operate his repair department this year at a distinct profit the garage man must know his costs—and keep an accurate record of them.

In city garages, averaging from fifty to a hundred repair jobs a day, it has become an axiom that no part of the business is more important than the keeping of adequate records and accounts. Many dealers and garagemen in smaller towns, however, are still operating on their old slipshod, hit-or-miss system with the result that they do not know from day to day how their business actually stands.

To meet the changed conditions of 1921 the dealer and garageman must adjust his business equally with the grocer or the retail clothing merchant. No business can be made profitable this year unless it is systematized from top to bottom. In the days of frenzied buying, which have just passed away, merchants and garagemen grew careless and records meant little to them. To-day, however, it is essential to know where profits come from—and losses, too—if the ledger is to show a credit account at the end of the year.

Most garagemen, whether in city or town, have a yearly inventory, yearly stocktaking and yearly examination of profit and loss accounts. But this yearly attempt at system is not enough. It simply means that a wrong system of handling the business may be carried on for a year before the fault is found. Certain jobs may have been consistently under-charged, the stock-room may have been loaded up with non-essentials and losses may have occurred in various departments. The garage man should know how his business stands from day to day—not from year to year.

These facts are being impressed upon garage men by the demands made upon them from time to time by the government. Income tax forms must be filled out, particulars of the business furnished—and if accurate records have not been kept, and kept up to date, the garage man finds himself face to face with an awkward situation.

Value of System

What is the value to a garage man of a thorough system of bookkeeping and records? With a practical system of accounts established the garage man may know, any day he wishes to make the enquiry, whether his business as a whole is making money for him, what departments are profitable, and what individual jobs are worth while and what are not. He may know, in addition, whether he is over-charging in some instances and under-charging in others, whether all his mechanics are of equal value to him and how they spend their time. He may know, further, exactly in what way all his spare parts and accessories are used, what his actual stock at the moment is, and, finally, what return he is receiving on his original capital investment.

How is this information to be gained? What method of record-keeping is the best? As local conditions vary it is impossible to give a standard system of accounting, which will suit every case. The individual garageman must establish the system which best fits his own particular needs. Nothing can be accomplished until the garage man realizes that the day of keeping records on memorandum pads is over. When this is brought home to the dealer the actual establishment of the system is not a matter of particular difficulty.

The smaller the shop the simpler the accounting system will be. The garage man in a small town should avoid a too elaborate method of bookkeeping. Too many books are as bad as too few. Too much system will serve only as a waste of time and means of bewildering the man who is not a qualified chartered accountant. The establishment of a system as outlined here on general principles, not details, should prove of value.

When a man brings in a car to be repaired, an order slip should be made out in triplicate. The first sheet should contain a detailed account of the repairs needed, together with a list of conditions on which the work is accepted. This must be signed by the customer and retained as a permanent office file. The second sheet goes eventually to the customer, while the third is attached to the car to be repaired.

There are two questions to be faced when a man brings in a car for repair. The first is whether an estimate or a fixed charge should be given, and the second, whether cash will be required or whether the order will be placed to a credit account.

Advantage of Fixed Charge System

It has been found in the majority of cases that the estimate system is unwise. The garage man does not care to exceed the estimate. A definite fixed charge should be placed on the majority of operations. The accumulating of knowledge upon which to base the fixed charge system will take some time, but when done it will prove of the greatest value, not only as a source of satisfaction to the customer, but as a check upon the work in the repair shop.

KEEPING TRACK OF YOUR BUSINESS.

The importance of keeping adequate records in the garage business cannot be over-emphasized. Owing to differences of conditions, varying with the locality and the amount of business done, it is impossible to outline definitely what system of accounting should be established. Canadian Motor, Tractor and Implement Trade Journal will endeavor to the best of its power to assist any garageman in putting his business on a definite bookkeeping basis. Questions as to the procuring of record books, forms, tags, etc., will be gladly answered.—THE EDITOR.

All definite operations possible to be done on a car should be numbered and a definite fixed charge given to each. Most automobile manufacturing concerns now issue booklets telling garage men how long it should take to do certain definite repairs to their own cars. The cost of the spare parts or accessories needed is known, and if the time is ascertained for all cases it will not be difficult to make a fixed charge for any given operation.

It will be necessary to exercise a constant check on this fixed charge in order to ascertain that the customer is being neither overcharged nor undercharged. In addition it is an excellent means to check up the average work of mechanics. If one mechanic persists in taking longer to do a certain job than another it can be seen that he is not as capable a workman. If it takes longer, on the average, for a mechanic to do a certain job in a certain month, then it will come home to the garage man that the worker is slackening in his efforts.

There will be always certain jobs for which a fixed charge is impossible. A garage man can never be able to tell exactly how long it will take him to locate a body squeak and make the necessary repair. In the majority of cases, however, operations may be listed as costing a definite price, and this repair cost can be given at once to the customer.

Cash On Delivery

There are still many garage men who have not yet learned that it is only possible to permanently operate a business successfully by the insistence on the cash-on-delivery system. The advantages of this business method are manifold. Disputes can be settled at the time they arise. The garage industry, as a general principle, is under-capitalized and it is sheer folly for the individual garage man to have his money tied up in credit accounts. The credit system prevents him expanding his business to the extent it deserves and makes the chance of failure always imminent. The manager of a large Toronto garage, which has repaired more than 20,000 motor cars in the last four years, estimated that it would cost him 10 per cent. more to operate his business if he used a charge account system instead of a definite cash payment method.

It is in the stock-room more than any other department that a definite cost accounting system is necessary. The mechanic who wishes a spare part or accessory to use in the repair of an automobile, truck or tractor, must, under all circumstances, make out a requisition slip in duplicate. One of the slips goes to the customer, the other to the stock-room files.

Too often in garages where such a system is supposedly in force exceptions are made which destroy much of the value of the method. Mechanics must not even borrow temporarily a spare part without making out a requisition. When the borrowed part (needed possibly for testing a car) is returned, the original slip can be destroyed.

Stock-Room System

In the stock-room a system involving a perpetual inventory is of the greatest value to a methodical garage man. It means considerable work, but pays for itself on many occasions. By this system it is possible to take stock quickly at any given moment and enables the garage man to keep his stock up to date and prevents an over-accumulation.

The system is this: For every class of article in the stock-room there is a card. Take hub caps, for instance. On the hub cap card will be printed: Minimum, 4; re-order, 10. Every shipment of hub caps received will be marked thus—IN—5; IN—4. The total, then, is 9. As each hub cap is taken out for repair purposes it is marked thus: OUT—1. The total is always kept up to date. When the number on hand reaches the minimum, 4, then 10 more hub caps are re-ordered immediately.

When the garage man who operates this perpetual inventory system wishes to take stock he merely collects the cards which designate the various articles, adds up the totals and he has figures which show him his entire stock on hand. Stocktaking, in this case, becomes merely a clerical operation.

There are three main accounts which a garage man must keep—sales, purchase and expense. Under these heads there may be several sub-divisions depending entirely on the size of the business.

When hub caps, for example, are bought an item is placed in the purchase account crediting them to the firm from which they were secured and debiting them to the purchase account. When they are sold they are credited to the sales account and debited either to cash, or if a credit system is used, to the charge account of the purchaser. The expense account lists all the expenses incurred in operating the business—heat, light, rent, taxes, salary, etc. The final statement as to the progress of the business is prepared by comparing all accounts and by making the final profit and loss balance account.

It is of the utmost importance in starting a thorough cost account system in a garage to secure proper printed forms, tags and slips. These can be printed specially for any individual firm, or there are concerns which make a specialty of supplying dealers and garage men with the necessary account forms.

The dealer and garage man who goes after business eagerly and intelligently under the changed conditions of 1921 and who establishes in all departments adequate systems of record and bookkeeping is going to make a financial success, despite the adverse business situation. But the man who trusts to haphazard memorandum pad systems will probably have a rude awakening at the end of the year.

Analyze to Sell Trucks! Sell to Reduce Costs

By D. R. COWAN

AT one time the sale of automotive equipment was considered merely from the pleasure standpoint, but that time has passed. The idea has gradually developed that the motor car satisfies a want which is not prompted purely by pleasure, and that consumers do not necessarily waste their money in pleasure-seeking when they purchase a car. This change of attitude was accelerated by the emergence of the motor truck, and later the tractor. At the same time the belief that the dealer in automotive equipment should be classed with vendors of articles to be used for immediate consumption rather than for further production has been so modified that the dealer is now to be regarded as a transportation merchant. His task is to sell equipment for transportation ranking second only to the railway and steamboat.

The dealer, therefore, who plans his business in such a way that he may be able to supply the means of such transportation will be the most successful in the long run, because he will be able to satisfy the individual requirements of his customers. Sometimes, it may be necessary to concentrate on the sale of motor trucks, and at other times on the sale of passenger cars, but generally speaking, a complete line of motor equipment will be the most apt to develop rapidly. And as this development takes place the keen wide-awake dealer will also enlarge the scope of his efforts. It would be better, therefore, that the idea of a mere automobile dealer be supplanted by the broader idea that the dealer exists as an expert whose task is to sell automotive equipment which will entirely satisfy the customer after the latter has given it at least several months' trial.

The most successful distributors are those who, while they may sell motor trucks and passenger cars together, have specialized in the two fields. As trucks were of secondary importance in distributors' eyes during the growth of the automobile industry, this branch of the business is one in which distributors of both cars and trucks have had the least experience and acquired the least knowledge. With this condition existing among the dealers it is little wonder that they sold, and uninformed buyers bought, sizes of trucks and equipment of a character unsuitable for their use. When a customer comes in a dealer's show rooms and asks to be shown some trucks, almost invariably the salesman will ask him at once: "What size do you require?" The customer knows very little about trucks and his answer to the salesman's question is very apt to be wrong. Accordingly the salesman proceeds to sell him the wrong equipment. On the other hand if the salesman would ask: "What hauling do you want done by truck?" and if he would then proceed to analyze the buyer's requirements, something very different might have been sold, such as a one-ton truck in place of a two-ton truck, or a five-ton truck instead of a three-ton truck.

The truck department of every distributor's business should be managed by a specialist in truck transportation. Even the small distributor should employ one or two salesmen who have a good grasp of the problem. They should have a thorough knowledge, acquired in some practical way, of moving most economically tonnage of all descriptions under varied conditions, and they should advise a buyer what to buy in order to satisfy his requirements. Distributors employing salesmen who do not have this knowledge are under a severe handicap in competition with others employing salesmen who might correctly be called "transportation experts."

As an example of the importance of knowing the conditions under which equipment is to be used, the following little story is related of an affair that put thirty-one 36 x 6 and 38 x 7 pneumatic cord truck tires out of use in two months.

A large firm in the dairy business sent five 1½ ton trucks, equipped with pneumatic cord tires, to the dairy section of Eastern Ontario for use in hauling milk from the farms to their condensary. Such transportation service induced the farmers to increase the production of milk, and trucks that morning and night usually carried forty 10-gallon cans only three-quarters full were soon carrying double-deck loads of sixty 10-gallon cans quite full. Each full can weighed 127 pounds—a total of 7,620 pounds (70 per cent. on the rear) or, plus the weight 4½ tons. This meant an overload of 1,500 pounds per tire. It was the custom on the part of the drivers to "step" on the accelerator when a good stretch of road was before them.

Very soon one driver had a blowout and he had to telephone for a new tire. This caused the others to look at their tires and found that they were chewn, and the rubber torn off in many places. The broken cords poked out of the holes like scraggly whiskers. It was maintained that the air pressure had been all right. Hadn't the air been heard to sizz through the line? Hadn't each tire been kicked and hadn't each driver sprung up and down on the hubs to test each tire? Of course he had!

A dozen new spares went on. Business was still good and heavy loads were still the order of the day and night. Tires were still being tested in the same crude way and drivers resorted to speeding whenever they felt like it.

It took the new spares just about as long to go to pieces as the original equipment. Thereupon, interested parties made an investigation of the circumstances which led up to this situation and this was found:

1.—Roads were good.

2.—Loads of as high as 3½ tons were being carried on 1½ ton trucks.

3.—Drivers were without pressure gauges—lost or mislaid them.

4.—Spares on demountable rims were kept in the garage but not carried on trucks.

(A)—The value of the demountable rims was being wasted.

(B)—Time was being lost in waiting for another car or truck to bring spares.

(C)—Tires were being run flat.

5.—There were no facilities for repairs of any kind. No tire putty or cord patches were being carried in stock.

6.—Valve caps and dust caps were absent in most cases and valve centres were being exposed to mud and moisture with resultant slow leaks.

7.—Pressure in the air tank would only amount to 90 pounds. The pressure in the tires averaged 85 pounds.

8.—No analysis of work to be done or loads to be carried or roads to be traversed or service facilities had been made by either the truck agent or the dealer who sold the tires. In the end it resulted in a loss.

First, a dealer must be prepared to service the trucks he has sold by carrying an adequate supply of parts in his stock room and by supplying free air with high enough pressure for pneumatic truck tires. So far as a supply of parts is concerned, truck users justly demand better service than do passenger car owners because a truck laid up for a part which is not in stock means a financial loss to the owner. Free air with high enough pressure to inflate properly pneumatic truck tires is a pressing need throughout this country. The air tank for inflating automobile tires is not usually strong enough to inflate truck tires to the proper standard of pressure, and when air is insufficient the tire is put to a strain which eventually causes trouble. **The dealer should regard the question of air with a sincere respect for the influence it has on his business future.**

Secondly, the truck distributor requires ample capital or banking connections to finance time payments. Many trucks can be sold to good reliable concerns providing the payments can be carried over a period as long as eighteen months or even two years. It is obviously impossible for any dealer to tie up his capital in this manner, and he must arrange for sufficient backing with some financial institution if he is to enjoy the profits which would accrue on time sales.

This suggests the third point, that the financial position of both customers and prospective customers should be given very careful study if the distributor is doing business on a credit basis. Mercantile reports on all active prospects should be obtained because they will show you who really controls the prospect's business, whether the size of the concern justifies the purchase of expensive equipment for cash or credit, and whether its financial capacity is sufficient to assume the obligation when the truck is sold. The concern may be perfectly willing to buy, but it may be nearly insolvent. Consequently a sale or attempt to sell in such a case would be a waste of time and effort, and might involve a loss of money. In a year like this, we will have many more failures than in a normal year, and even in a normal year there is a large percentage of failures. So the dealer should be advised to make sure that he is going to receive payment for them, sooner or later.

Knowledge of truck transportation, financing time payments, the customer's requirements, and finally his ability to meet his obligations will make the sale of trucks a more profitable business.

Among the fruit growers of Canada the truck dealer will find a profitable field. This picture shows a typical Ontario orchard with an ideal road for truck transportation.

Power Insurance for the Farmer

In Nebraska There is a Law Which Stipulates That Every Tractor Sold in the State Must Undergo an Official Test—Tractor Dealers Will be Interested in This Article

By C. M. McLENNAN

SOME tractors have power some of the time, others have too much for the job, and still others have sufficient power or are faulty in other respects. But out in Nebraska all tractors sold must have plenty of power—and every other requisite as well—or they cannot be offered for sale. Unfortunately the average farmer is not sufficiently versed in mechanics to decide with reasonable assurance of certainty that any one tractor will do the job claimed for it, or that it will measure up in the matter of horse power. If all the tractors that have failed to perform, as their makers claimed they would, were put in a single pile it would make considerable of a scrap heap. And if the stories of failure could all be told it would make a pretentious library—in size at least.

Tractors and power farming in general have come to stay, there is no doubt whatever on that point. But just as there are automobiles that fail to live up to the expectations of the purchaser there are tractors —and tractors. The big difference lies in the fact that the failure of a tractor to work always causes delays that are likely to become serious and expensive. We know of one farmer who sold three teams of perfectly good horses and bought a tractor just as he was ready to do his seeding. He had some rather bitter experiences and finally had to hire two men and two teams at a high rate of pay to get the job done, and then his seed went into the ground later than was good for it. There are probably thousands of cases similar to this, and in a good many instances these farmers condemn the tractor altogether, when a good machine, properly operated, would have kept them sold on the tractor idea.

A large type tractor developing in the neighborhood of 50 h.p. at the drawbar—Note the smaller trucks at the rear of the dynamometer. They are hitched on to increase the load.

The Nebraska Tractor Law, which was recently put on the statute books, stipulates that every tractor sold in the state undergo an official test by the Board of Tractor test engineers. If the machine passes the tests it is pretty certain to deliver power and perform in accordance with the promises of its makers. The testing is done at the University of Nebraska, where special buildings and outdoor testing plots and machinery have been erected.

THERE are four reasons for the tests. First, to guarantee the farmer exactly what is represented to him by the seller. Second, to determine, for publication, the exact performing ability of each type and make of tractor. Third, to afford a standard of tractor performance that will enable the farmer to select the type of machine best suited to his particular work, as investigations have proved that many farmers are using tractors much more powerful than they actually require, with a constant loss of power and money, a waste of fuel and imperfect performance. Fourth, to help the manufacturers of tractors discover and correct the weaknesses of their machines. This service has proven most valuable, as invariably the makers and chief engineers of the machines undergoing the tests are present. Innumerable improvements have already resulted, and no less than seven different tractor companies withdrew from the tests in one month, in order to improve their machines.

The first test is the "limbering up" run. The chief object of this is to take the stiffness out of the new machine. Records of any repairs required and the fuel consumed is kept by an observer. This is really a drawbar test at from one-third to full load for twelve hours. From the limbering up test the machine is taken to the pulley test house. The tractor is firmly braced and a belt run from its pulley to the special testing machinery in another compartment. The belt conveys the power from the tractor to the Sprague dynamometer. Electric resistance creates the load within the dynamometer.

As the belt turns the pulley of the dynamometer the entire machine tends to turn, and this pull is registered by a large scale. The scale weight thus obtained is multiplied by the r.p.m. of the pulley and the result divided by 3,000, which gives the horsepower delivered. Attached to the pulley of the dynamometer is a revolution counter, which automatically begins to count the revolutions. Another revolution counter is applied to the centre of the flywheel shaft, and an electric circuit thus completed, starting the counter on the dynamometer. This checks up on loss of power between the two pulleys. Three sets of tests are given in the pulley test-house. First is the brake horsepower test at rated load, second the brake horsepower test at minimum load, and third at the maximum load.

NATURALLY the farmer wants to know whether a tractor can pull or not. In other words, it is supposed to be able to haul a certain number of 14-inch bottoms, or to do other traction work in the field. The University applies the drawbar tests next, and to furnish the required load they have developed the "dynamometer car." This consists of a special tractor body mounting a powerful dynamometer that makes the tractor being tested generate the electricity which is used to develop the load by resistance. The gearing on the drive wheels is harnessed up to a generator and the electricity thus generated creates the resistance load.

The mechanism for measuring the pulling strength of the tractor is found on the drawbar of the car. It consists of a heavy oil cylinder into which a plunger or piston is forced as the tractor pulls the car. The weight of the pull is measured by the force with which the oil is driven through the flexible steel tube from the draft unit or oil cylinder to the pressure gauge, which records, in ink, the pull registered.

The fuels used in these tests are the lowest grades on which the manufacturer claims his machine will operate. For instance, if he claims that it will use only gasoline, the lowest grades of gasoline sold throughout Nebraska will be used in the tests. If the maker claims that it will operate on either gasoline or kerosene, the least volatile of these fuels will be used. The manufacturer is asked to specify the grades of lubricants to be used on the various parts of the tractor. The maker may select any of a half dozen kinds of belts supplied by the University, or he may provide his own belt for the belt tests.

The drawbar horsepower test at maximum load is for the purpose of determining the maximum power which the tractor will develop. A record is made of drawbar pull with the traction dynamometer; rate of travel, wheel slippage and engine speed being measured at the same time. This is conducted in a series of 50-foot runs, starting with the rated load and increasing gradually until the maximum is reached.

A MISCELLANEOUS test to make observations on any special features of the machine, including work on inclines, turning radius, effectiveness of brakes, etc., is provided for. The endurance test is the last of the series, and is designed to give the engineers an opportunity to detect any features that will give continual trouble. Observation is made of all replacements and repairs, adjustments and cleaning, also of any difficulty in the operation of the lubricating system, cooling system or any other part of the tractor. If an undue amount of wear is suspected in any part of the tractor, it is taken apart at the end of the test for examination.

Up to the time of writing, the board has tested 64 different sizes and makes and types of tractors, and in three-fourths of the cases have uncovered faults as well as virtues unknown to the manufacturer, and in more than a dozen cases have been called upon to help manufacturers improve their machines.

A tractor has got to be right to get by this test, and the law is as valuable as it is unique. It will obviously eliminate a lot of trouble for the farmers of the state, and save them, and the tractor manufacturers as well, a good many thousands of dollars. It is certain that this new law will be copied by more and more of the states until it becomes universal. The surprising thing is that somebody did not think of it long ago.

New Case T.M. Power Farming Catalogue

THE J. I. Case Threshing Machine Co., Racine, Wis., have just issued their 1921 power farming machinery catalogue. It is a book of 112 pages and is well illustrated in color. This is one of the most complete expositions of gasoline tractors ever attempted in a general tractor catalogue. The machines are described in full and illustrated by plates showing detailed units, sectional views and general views.

In addition to the information concerning the company's tractors are sections devoted to their line of threshing machines, steam tractors, grain handlers, baling presses, tractor plows, ensilage cutters, road machinery and tractor harrows.

Number of Trucks in Canada

ACCORDING to official returns the trucks in use last year in Canada totalled over 26,000, Ontario having about 16,000.

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An Accounting System

THE automobile and implement dealer who doesn't keep a satisfactory record of his business is in an analogous position, in these trying times, with the skipper who tries to navigate his ship in a storm without the aid of compass and chart.

The dealer should have a system—and it need not be an elaborate one—which will tell him where he stands financially, not each year, quarter or month, but every day, and at a few minutes' notice, when the occasion demands. Some primitive people try to run their business without an accounting system—unless we call jotting something down on a pad a system. But the time has now arrived when the business that is not conducted along sound lines cannot survive.

In the old days gone by a retailer's bookkeeping system was a very elementary affair. If he had such facts as the following: Customers owing him money and the amount owed by each; creditors owed by him and the amount owed each; the amount of cash on hand; where the money taken in goes to; and merchandise on hand, he was satisfied that he knew all that was necessary.

Now, the up-to-date business man has come to recognize that he needs a great deal more information than enumerated above. He wants to know the condition of his business at any given time. He wants to know by comparisons whether his business is progressing or not. He wants to know what lines are paying and the lines that are not paying. He wants to know what it costs him to do business. He wants to know what his overhead expenses are; whether his service department is paying a profit or operating at a loss, etc., etc.

In this issue of M. T I. there is appearing an article, "Keeping Track of Your Business," which is the first of a series designed to help the dealer in this important matter. The writer is making a survey of systems now in use by successful dealers and the results of his efforts will be passed on to M.T.I. readers.

Questions that may be puzzling readers regarding any phase of their business will be gladly answered.

Keeping the Machines Sold

FROM now on many implements and power farming machines will be sold. Just how long they remain sold depends a great deal on the dealer. There is nothing more important than that the dealer himself should know each machine thoroughly and be able to instruct his customers fully before the machine leaves the store. Each implement should be set up ready for operation, and if it is a newly-designed, or complex machine, like the tractor, it is always a good plan to accompany it to the field and help the purchaser to start it.

After a new machine has been working for a short time the dealer will find it to his interests to visit the purchaser to see how he is getting along. Bolts, nuts, etc., are apt to work loose at first and very often bad breakages result. If such a thing as a bad breakage should happen, the farmer is sure to be vexed and think the break resulted from defective material.

The farmer should be cautioned about loose bolts and the dealer should keep in close touch with him, either by 'phone or by a personal visit, to make sure that everything is as it should be.

A machine that works perfectly in the field without trouble is sure to please.

When the customer is satisfied that he made a good buy the dealer can rest assured he has thoroughly sold that man and has made a permanent customer. Until a customer is satisfied no machine can be said to be truly sold.

Steel Posts and Fencing Profitable Line

THE implement dealer who hasn't yet started to sell wire fencing and steel fence posts should seriously consider doing so, if for no other reason than to round out his line. There are real business reasons, though, why he should handle this necessary line. It is clean, requires no service to speak of, and offers a reasonable profit. The farmer is always in the market for fencing, and a line that turns over rapidly is always a paying proposition for the dealer.

The farmer, when he buys fencing, is usually in the market for fence posts, too. Formerly he bought his fence from his implement dealer and then drove down to the lumber yard for a load of fence posts. Few implement dealers could handle cedar fence posts. But now things have changed. The implement dealer can now say to the farmer after he has sold the fence, "Let me show you a post that will give you a better fence and save you time and money besides." He then goes on to tell the farmer that with steel fence posts he need dig no back-breaking post holes, nor bother with setting or filling in. With the steel post all that is necessary is to drive it where it is wanted. The wire is attached easily with convenient clips much faster than by using staples. Then when the fence is up it is permanent and strong. The steel posts will last indefinitely and stand any farm strain.

But perhaps the farmer will object and say that he can buy cedar posts for half of what steel posts cost him. That's where Mr. Dealer figuratively rolls up his sleeves and starts right in.

"Why," he says, "you know yourself you can't put up more than two or three cedar posts an hour by the time you get the holes dug and the posts set and filled in."

"That's right," admits the farmer.

"And with the steel posts you can drive in twenty in the same time unless you're slower than molasses," continues Mr. Dealer. "Now you pay your hired man about thirty cents an hour. Stop and figure what the extra time costs you that he takes to put up your fence with cedar posts. Then the steel posts last two or three times as long." The farmer usually sees the light of reason.

Steel fence posts are comparatively new and the dealers who are handling them get the reputation of being up to date.

No large investment is necessary to stock fencing and steel posts. In fact some dealers will take orders in the late winter for spring delivery, so that the farmer gets his posts as soon as they reach the dealer. This is good business, because it insures a rapid turnover. Then the extensive advertising that the larger manufacturers are doing is an advantage for the dealer.

The dealer in certain districts will find a ready market for fencing among fruit growers and farmers who have orchards to protect. If a highway runs beside an orchard few automobilists can resist the temptation of stopping, climbing the fence and helping themselves. The loss to the farmer in fruit may be small, but too often valuable trees are broken and injured.

The necessity of wire fencing and the appeal the steel fence post makes to the farmer is such that the wise dealer cannot afford to overlook it.

Precautions in Handling Gasoline

THE storage and handling of gasoline is not hazardous if a few simple rules are observed. Gasoline will not burn without air, but spilled on the ground, or in an open tank, it will burn fiercely if a match flame or other strong heat is brought in contact with it.

Gasoline vapor is more dangerous than gasoline. It is invisible, and if mixed with the proper proportion of air, a "mixture" is formed that will explode if any kind of open flame is brought nearby.

Ordinary precautions to observe are:

Prevent spills.

Do not strike matches near a car that is being filled.

Do not smoke while a car is being filled.

Keep open flames and fires of all kinds away.

Use only a closed can, like an oil can, for priming.

Never let gasoline stand in open cans or tanks.

Do not pour from one container to another if there is any kind of open flame or fire nearby.

Never use gasoline for cleaning automobile parts.

Never fill the gasoline tank with the motor running. A spark from the exhaust may ignite any gasoline that has been spilled on the ground.

Keep the garage well ventilated.

Be careful; take no chances.

To extinguish a fire in the engine or tank, use a spray extinguisher.

To extinguish a fire on the ground, exclude air by covering the flames with sand, blankets or a coat.

Do not use water on a gasoline fire.

Let's Go!

THE war is over. So is the slump. The crisis is past. Bilious business is recovering. Unbalanced ratio between supply and demand, undigested credits, fevered expansion only needed a sudden change in commercial weather and a drop of the price barometer to bring on an acute attack.

But business is better. The fever is gone. Rest and sparing diet have done what the business doctors could not. All that business needs is to get the brown taste out of its mouth and stop talking about how bad it feels. Business is convalescent. Its appetite is coming back. It needs a tonic. That tonic is salesmanship.

Salesmanship means digging up prospects and working on them harder and oftener than anyone has thought of working during the last few years. It is no time for the chap who loses his desire to make money if he has to earn it. It is a time for the tortoise who keeps everlastingly at it to beat out the hare who waits for "things to pick up."

Business is not dead, nor paralyzed nor even asleep. It is a little weak, but is rapidly convalescing. Its appetite is improving. Let's go.—Power Farming Dealer.

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Tractor Repairs and Brazing

By F. H. SWEET

Nearly every repair man knows something of the problems that present themselves in the use of oxy-acetylene torches on a ticklish job. The writer of this article describes in detail the way one of these difficult situations was handled. The job discussed embodies several difficulties not always found in brazing work so that even the experienced torch operator may find the article helpful. The operator was obliged to invent little devices and appliances on the spur of the moment in order to overcome some of the obstacles.

THERE seems to be an ever-increasing tendency to combine the tractor and automobile business. That is, automobile dealers are now commencing to include the sale of farm tractors with their car agencies. In fact, some are doing almost as much business in the tractor line as they do in the automobile line, and the up-to-date dealer who operates a garage and repair department in connection with the sales room is already preparing to handle tractor parts and do all kinds of tractor adjustments and repairs.

This requires but little preparation, however, since the same machinery and tools employed in automobile repairing, with but few changes or additions, may be used to repair farm tractors.

The growing inclination on the part of the car dealers to enter the tractor field is but a natural result of their position. They have every facility for so doing, since a tractor is really an automobile insofar as the application of power is concerned. It also offers an opportunity to increase their volume of sales. Farmers now own about 70 per cent. of the automobiles. The dealer's acquaintance must, therefore, be large among the men who will buy the farm tractors.

The dealer who operates a garage with a well-equipped repair department will be doubly fortunate since he can then get the most of the repair work on the tractors he sells; not only the battery, magneto, oil service, and minor adjustments, but he can handle piston boring, bearing and crankshaft work. If he owns an oxy-acetylene welding outfit he can repair most of the broken castings and worn parts.

In fact there is scarcely any kind of repairing about a tractor that the torch welder cannot do; all of which argues for the installing of a welding and cutting torch in every garage repair shop, particularly those that handle or contemplate the handling of tractors used by farmers.

Using Oxy-Acetylene Torches

The different kinds of brazing are so nearly alike that it is hardly necessary to go into all the details of various repairs. The job discussed herein embodies several difficulties not always found in brazing work, so that even the experienced torch operator may find the article helpful.

In one sense of the word, this might be called a welding job, since the welding torch was employed, but the edges of the fracture were not fused together as is customary in welding. They were merely covered with a layer of bronze filler metal which made it not strictly a welding job. The thinness of the metal made the welding together of the two sides of the fracture next to impossible, and as this was not necessary the fracture was brazed.

Brazing with the oxy-acetylene torch differs from welding in one way, in that the part or parts to be brazed are not melted to a fluid state in the fracture. Even though this is done, the melting is not more than skin deep. In other words, the place to be brazed is not melted below the surface. Just a thin skin of the surface is heated to or near a melting condition and this never white hot and fluid.

No attempt is made to melt and mix the sides of the fracture with the filler rod. The main endeavor is to get the filler bronze to adhere firmly to the surface of the part being brazed. This is another way that brazing differs from the torch welding. In many instances brazing is merely a makeshift repair, not to be compared with welding.

The Brazing Process

When compared with oxy-acetylene welding, however, the brazing process is very simple. No great amount of skill in torch practice is required nor are any of the usual precautions that are so essential to successful welding in regard to preheating and reheating necessary. The operator is often obliged, however, to invent little devices and appliances on the spur of the moment, as it were, in order to overcome some of the obstacles.

The necessity of constructing such a device was perhaps the most difficult part of the brazing job I am describing. That is, the job seemed quite impossible until the welder hit upon the idea of making a special torch tip to fit the work. It was, in a manner, impossible to braze the thin copper tubes with an ordinary welding tip, due both to the locations of the fractures and the thinness of the metal tubes. In the first place, the cracks in the tubes were not in reach of the welding flame as it came from a standard tip, and there was great danger, owing to the thinness of the copper, of melting or burning holes through the tubes.

A special brazing tip was evolved in order to permit the welder to reach all parts of the damaged tubes. The tip was very slender, and had a curve to it. The shape permitted the operator to reach any side of the cracked tubes. By simply giving the curved tip a quarter or half turn, the operator was able to braze cracks from almost any angle. With this special tip he could apply the point of the flame to any desired spot without danger of melting adjoining tubes.

This special tip was made of a piece of copper tubing welded to a discarded welding tip. The flame end of this tip was filed almost to a point and forced partly into an end of the copper tubing, care being taken to see that neither the hole in the welding tip, nor the hole in the tubing, was made solid and air tight by building a fillet of bronze around the joint.

The outlet end of this special tip was hammered together so that a new hole of correct size could be made in it. This was accomplished by slowly filing a notch in the closed end of the tube. As soon as the file cut through the solid end into the inside diameter of the tubing, the tip was tried out on the torch. After several trials, the proper outlet was attained. Then the tip was ready for use.

Description of a Definite Job

The job in hand was a water cooler for a familiar type of farm tractor. The copper tubes are approximately 1/16 of an inch thick and about one inch in diameter, and are located about an inch apart, one ring of tubes offsetting the other. Their proximity made it impossible to manipulate the standard welding tip between them and their small diameter made it impossible to weld the cracks or leaks from the inside of the tubes.

The thinness of the walls was also a factor in preventing welding. Therefore, the only way to repair the leaks, which consisted of cracks from an inch to several inches along the sides of the tubes, was to construct a special tip for the welding torch, as just described, which could be inserted between the tubes. Even then, it was necessary to be very careful not to burn through the sides of the tubes with the small flame obtained by the use of this special tip.

Instead of melting into the tubes as in welding, patches of filler metal were merely stuck to the surface of the tubes along the cracks. Before starting to braze the tubes, however, each crack and a portion of the metal in its near vicinity was thoroughly scraped and cleaned until the bright copper was exposed. This was done to prevent any oxide from interfering with the molten filler. The naked metal furnished a better surface to which the bronze filler could adhere.

Previous to cleaning, the tubes were corroded or oxidized by the action of the air and by the water due to the leakage. To attempt to do the brazing without first removing all of this deposit would have meant considerable trouble in getting the bronze to stick to the tubes.

In preparing the tubes for brazing, no attempt was made to groove out the cracks as is usual on many brazing jobs. First, the metal was too thin and then the lack of working space forbade it. The only preparation for brazing then, aside from cleaning the leaks, was to place the apparatus in a position where the tubes would be horizontal during the brazing process. Vertical brazing is quite simple when compared with vertical iron welding, but it is easier to do better work if the job can be arranged so the part to be brazed is horizontal, because there is then no tendency of the filler metal to overflow and drip back on the finished bond.

Controlling the Flame

A standard, neutral flame is no doubt the safest one to employ in brazing, but a slightly reduced flame can be used with impunity if the operator is careful about manipulating the torch. This reducing flame carries a slight excess of acetylene and is, therefore, less powerful than the neutral flame. The temperature is lowered by the over-supply of acetylene gas, thus there is less danger of burning the metals, especially thin metal as used in these tubes.

Where the acetylene gas in the welding flame exceeds the oxygen, there is less danger of oxidizing the molten metals. Practically all of the oxygen is consumed by the acetylene, and, therefore, cannot be forced through the flame into the melting metals. The latter is probably the main reason for employing the excess acetylene flame. This flame is often recommended merely in order to make sure that there is no excess of oxygen in it, since it is oxygen that plays hob with brazing in all kinds of work.

A slight reducing flame was utilized to braze the tubes in the job mentioned here. The point of it was applied to one end of a crack and at the same time to one end of a bronze filler rod. Both were heated, but most of the heat was applied to the rod. The flame was moved in a circle over the end of the filler rod and an arc of the crack, the movement being timed so the drop of filler at the end of the rod would be melted when the portion of the leak was ready to receive it.

As soon as a very thin skin of the tube metal started to melt, the molten filler was applied. This

application was in the form of a twisting dabble which served to spread it over the melting surface of the tube as soon as the filler rod melted. Meanwhile the flame and filler were gradually moved to another portion of the crack where the filler and tube were once more treated and united by the deft manipulation of the filler rod.

The crack was covered with filler bronze from end to end in a series of ripple-like ridges. These ripples were formed by the dabbling and twisting motion of the rod. Each one of all the cracks was repaired in a like manner, one after the other, by rolling and tilting the job to bring the cracks to a horizontal welding position. No attempt was made to make the joint smooth and level, but a surplus of metal was added to each leak.

A brass filler rod could have been employed, but a bronze one was used on all the leaks, its diameter being one-eighth of an inch. The lower melting point of the bronze was the more convenient with which to braze the copper. This lower melting point permitted the rods to be melted more in harmony with the thin metal of the tubes. That is, the thinness of the copper in the tubes about balanced the melting point of the bronze filler so there was no danger of overheating the tubes while endeavoring to melt the filler. In other words, the thin section of the copper tubes, in effect, lowered their melting point, since only the surface was melted.

A special grade of patent flux powder was used throughout the work, and was applied by dipping the heated end of the filler rod in a pot containing it. Enough powder adhered to the filler rod with each dip to flux one ripple or drop of melted filler, the flux being carried to the braze as soon as possible after dipping.

Brazing fluxes are supposed to do several magical tricks when applied to the melting joint. This is sometimes considered doubtful. I think the principal use of a flux is to prevent the melting metal from being oxidized by the action of the surrounding atmosphere. Its office, then, is to cover the melting metals as much as possible to prevent any oxygen of the air, or of the torch, from attacking and turning them to oxide. The flux powder forms in flakes or partitions to prevent the metals from fusing into a homogeneous mass, and melts and spreads over the surface of the bond, thus warding off the oxygen.

If the brazed joint is not properly made and guarded, some of the oxide is bound to be trapped, thus mixing through the bond and weakening it. It is readily apparent, then, that a good deoxidizing agent is advisable in brazing work such as has been discussed. Of several methods of applying flux, the one just described is probably the simplest and easiest.

Completing the Job

When the last break had been welded, the whole device was placed away to cool. No covering or banking was employed to retard the cooling process, as is the usual custom in welding or in brazing heavier parts. Since there was no danger from contraction cracks, the job was allowed to cool at will. When cold enough to handle, it was tested for pin holes or leaks in the joints.

Had not the special tip been devised, it would have been necessary to tear down the whole apparatus in order to replace the leaking tubes with new ones, which shows the importance of studying every job from all angles.

Rough, Strong-Arm Selling Taboo This Year

The Business is in the Country as Usual, But It is Bashful—Enthusiastic Sales Effort, Coupled With Brains and Tact, Will Encourage It to the Dealer's Door

By R. S. WILLIAMS

WHAT difference a few weeks make! Just the other day it seems, the buying public was rushing frantically from one disinterested merchant to the other in a vain endeavor to find somebody who would sell. But oh, what a difference now! Before the dust of the recent buying orgy has settled, we are confronted with the heartrending spectacle of a public suddenly grown cold. Apparently everybody is vieing with one another to see which one can wear the old suit longest and stay within the law.

In the estimation of the foremost authorities and prognosticators the present situation is bad enough on the surface but at bottom is fundamentally sound. Notwithstanding the fact that prices for farm products have tumbled, the value of 1920 farm products reaches the stupendous total of over nine billion dollars. The farmers of this country have money to spend but they are like the bashful girl—they need a little coaxing. The business is in the country but it is waiting—shylike, you know. Very well, how can we reassure this coy miss—the great buying public—and persuade her once more to enter our stores in great numbers ?

Rough, Strong-Arm Work Won't Do

One thing is certain—rough, strong-arm work will never do. The time is past when the dealer can resort to anything but the most broad-minded policies in dealing with his customers. He must deal fairly with every man and keep foremost in mind that courtesy and real service are the most important factors in business. It is now a time for real selling, backed up by effective sales promotion work that reaches every man and woman in your trade territory. Enthusiastic, inspiring sales effort, coupled with a judicious application of brains, will get business this year, the same as it always has done in the past.

The retail implement dealer can compliment himself upon the class of trade he deals with. The farmers, as a whole, never have been guilty of the reckless, extravagant buying that characterized the cities. Not having gone wild on a buying rampage, they will not swing so far the other way. It is not to be thought that sales will be as easy this year as last, but the farmers will buy.

Will be Last-Minute Purchases

Taken in its entirety, the machinery in the hands of the farmers is in pretty bad shape. There has been a lot of repairing done during the last three years and many a farm tool that is being counted on to go through this year will fail at the crucial moment. This will result in a lot of last-minute purchases and the dealer who is in position to supply the goods will get the business.

In other words, the business is there but it's a little bashful. It is hanging back, sort of waiting to see if somebody won't shade the price a trifle; all of which is quite natural and is a state of mind that can't be counteracted or neutralized by argument. You can present facts and figures and statements and charts until you are black in the face; you can prove by water-tight logic that the present price of farm implements is lower in proportion than that of any other commodity; you can demonstrate that the relative value of farm machinery and farm products is still in favor of the farmer; you can talk to a single farmer or a crowd of farmers until you are hoarse, and you won't make any more impression than a gust of wind against a stone wall. The statistician is just as popular at a farm gathering as a prohibitionist in a convention of bartenders. He may be right, but that doesn't help him. As one sales manager said, "They may know you are telling the truth, but they don't want to hear the truth."

A very good method to adopt within the next four weeks is the plan outlined by one good dealer. He says in effect, "I make a little noise around the warehouse. I never permit customers or visitors to get the idea that business is rotten or that I am conducting an undertaking establishment. I get out some shipping packages, open them up, and begin to set up sample machines. I make a lot of noise. I hammer like hades. When a farmer steps into the place, he is greeted by the sight and sound of industry. He sees a business that is alive and pulsating. When he asks, 'How is business?' I can wipe my brow, point to the assembling floor and say, 'mighty good.' Seems like everybody wants machines at the same time. Sure keeps me humping!"

It may be stretching the truth a little but it's a whole lot better for business to adopt the attitude outlined above than to crawl in behind the stove where nobody can see you and force every visitor to play a little game of hide-and-seek in order to find you.

Intelligent Salesmanship Required

As observed before, the business this year is lying close to the surface, but it doesn't show up. The man who possesses the initiative and keen sense to grasp the situation will be able to get his share as usual, but it will take the application of some really intelligent salesmanship. No crude methods, no rough stuff.

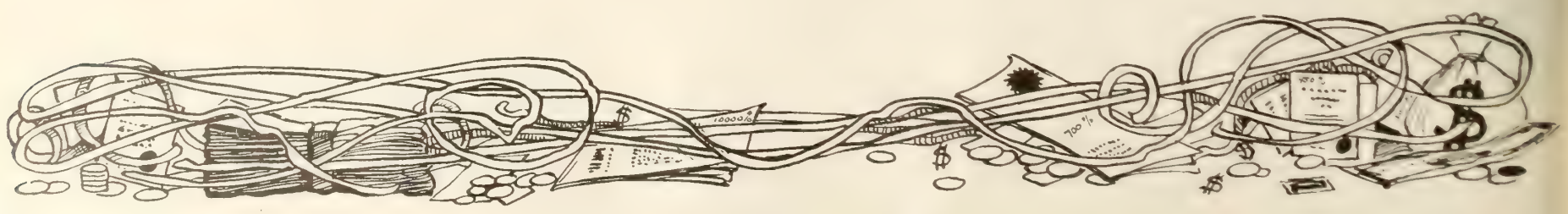
This year, more than ever before, plan on using every advertising and sales assistance you can get. Don't depend wholly upon personal canvass either by yourself or your men to get your full share of the trade. Keep in mind that the trade this year is reluctant. It will require consistent sales effort of an unusual nature to bring the average farmer to the point of buying, and if you are depending solely upon personal calls you will sell very few men outside those visited. Inasmuch as your time is so limited, the business you derive from this source will scarcely come up to previous year's standards.

The wise business man will supplement his own efforts by a running fire of advertising—sales promotion, as it is called, and sales promotion it is when correctly used. Right now you should be circularizing your trade with sales letters and good advertising literature on tillage implements, drills, seeders and planters. Nearly all the larger manufacturers are prepared to help their dealers do this kind of work, either by supplying the literature to be distributed or by doing the work entirely upon receipt of the prospect list.

Advertising Helps

Use the local newspaper this spring as never before. A good advertisement appearing every week keeps your name and your line prominently before your trade and supports the special mailing to prospects.

Keep the sample floor in a clean, neat condition and have seasonable machines in good running order to show. Stage a little demonstration every Saturday afternoon. Nothing attracts attention like motion. And above all: Don't forget that old-fashioned courtesy and genuine after-sales service are still paying 100 per cent. dividends as always.



This kind of year calls for quality haying machines such as those in the International line, listed below. (This is a recent farm paper advertisement.) The agent who is rendering the proper service will make it plain that true economy in haying time means the use of efficient machines. It is poor policy to permit the use of time- and hay-wasting, worn-out equipment. International agents are urged to co-operate with the selling assistance the branch house has available.

International Hay Machines Do the Work Cheapest

It never pays to spend time and money trying to keep worn-out machines on the job. This is especially true at haying time. The quicker you can get the new-mown hay cured and into the stack, the better quality hay you will have. Use the best machines for haying—machines good enough to help you make time and put up the hay fast. International hay machines are good. Their long, unbroken record and dependable field service prove their worth.

Therefore you make a true investment when you buy International hay machines. They save labor and time, both of which are especially valuable just now. While you are still busy with the hay, grain harvest is nearly always at your heels. You wonder how you are going to get your hay out of the way. Do it with efficient machines.

You know your own problems better than anyone else, but, whatever they are, there are machines in the International Harvester line that will put your hay where you want it, the way you want it, in the quickest, most economical way.

Study the International hay machine catalog. It tells all about McCormick and Deering Mowers and Rakes, International Tedders, Combined Side Delivery Rakes and Tedders, Loaders, Sweep Rakes, Stackers and Hay Presses. **Write for a catalog and see your International Agent.**

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD
HAMILTON CANADA

WESTERN BRANCHES — BRANDON WINNIPEG MAN CALGARY EDMONTON LETHBRIDGE ALTA ESTEVAN N BATTLEFORD REGINA SASKATOON YORKTON SASK
EASTERN BRANCHES — HAMILTON LONDON OTTAWA ONT MONTREAL QUEBEC QUE ST JOHN N B

Saves Time When Time is Money

The New Big Ball

is now offered to the Canadian trade exclusively under the well-known names

McCORMICK
DEERING
INTERNATIONAL

Six balls to the bale instead of ten means a big saving in storage room to a dealer. Compare the old and new at the bottom of this page. You can figure from this the many more bales that can be stowed away in a given space.

Each ball contains nearly twice as much twine, which means that the farmer can go nearly twice as far before refilling the twine can. This saving in time means so much at harvest that the farmer will demand the new twine. Get ready to supply the demand by putting in your stock now. Write us to-day or see the blockman.

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD
HAMILTON CANADA

WESTERN BRANCHES — BRANDON WINNIPEG MAN CALGARY EDMONTON LETHBRIDGE ALTA ESTEVAN N BATTLEFORD REGINA SASKATOON YORKTON SASK
EASTERN BRANCHES — HAMILTON LONDON OTTAWA ONT MONTREAL QUEBEC QUE ST JOHN N B

Saskatchewan Auto Dealers' Convention

THE first annual convention of the automobile trade section of the Saskatchewan R.M.A., held in Regina recently, was an undoubted success. Over eighty delegates were present, most of whom were sent as representatives of the automobile and garage men of their respective towns. The meetings were held in the council chamber of the city hall and were notable for the keenness of the discussions.

Two very interesting and instructive addresses were delivered by H. S. Carpenter, Deputy Minister of Highways, on the Provincial Government's Good Roads program, and by A. C. Emmett, of Winnipeg, editor of Motor in Canada, on the Development of the Automobile Industry.

The burning question of the convention was, Who is going to pay the hangover of the luxury tax? At the big meeting of manufacturers and dealers, which met at Ottawa at the end of December to get the Government to rebate the tax, the manufacturers promised to see that the dealers were protected. The manufacturers agreed to absorb half of the tax by crediting the dealer with an extra amount on commission on every car purchased by him before March 1, and delivered by May 15. The dealers maintain that this arrangement has not worked out satisfactorily, and after a full and free discussion at the convention the following resolution was passed:

Resolution

WHEREAS, the sudden suspension of the Luxury Taxes as they applied to automobiles has placed retail automobile dealers in a serious predicament, if they are called upon to absorb into their costs the amount of Luxury Taxes advanced on stocks of cars on hand at December twentieth, nineteen hundred and twenty, and

WHEREAS, the said taxes were collected from the dealers in advance by the manufacturers, thereby constituting the said manufacturers agents of the Government and whereas it was the intention of the Government that the consumer pay the amount of the said tax, and

WHEREAS, the dealers are required to sell at prices set by the manufacturers, and have therefore never been in a position to protect themselves against emergencies of this kind, by taking advantage of the rising markets, and

WHEREAS, the manufacturers have been able to take and have taken such advantage during the past six years, as proven by their profit and loss sheets, and

WHEREAS, a large number of dealers will be caused to make an assignment if they have to absorb the said tax, and in any case their very existence will be jeopardized, and

WHEREAS, the dealers' present overhead charges amount to approximately 20 per cent. of the retail sales price, and the present discounts allowed are not more than 20 per cent. of the retail sales price, thereby leaving no margin, and

WHEREAS, such being the case the dealers will in any event have to operate at a loss during the current year if they are required to absorb part or all of the said tax so paid, and

WHEREAS, such a condition will have a very serious effect in reducing the manufacturers' sales in the future and effect a certain disorganization of the present system of distribution, thereby effecting a hardship on the public, and

WHEREAS, the Government has refused to return to the dealers the tax so advanced by them, although they recognize the injustice of the dealers' position, and

WHEREAS, the manufacturers are in a better position than the dealers to effect a rebate of the said tax from the Government as it was they whom the Government collected it from, and

WHEREAS, the Finance Minister has stated to the dealers' representatives that the manufacturers have agreed to reimburse the dealers in whole or in part, and

WHEREAS, certain manufacturers have offered to absorb 50 per cent. of the tax so advanced by the dealers upon certain conditions, which conditions, a majority of the dealers are unable to comply with, as they have already too large stocks of cars on hand, and

WHEREAS, by making the above offer the said manufacturers also recognize the injustice of the dealers' position, and

WHEREAS, this offer is not fair and equitable in any way as the manufacturers would benefit to a greater extent than the dealers, and moreover the dealers should be protected by the manufacturers in cases of this kind;

BE IT THEREFORE RESOLVED that we, the retail automobile dealers of Saskatchewan, organized as a trade section of the Retail Merchants' Association, in convention assembled, at Regina, Sask., this twenty-sixth day of January, nineteen hundred and twenty-one, strongly urge the manufacturers to reconsider thoroughly and impartially the facts set out herein, and return the amount of the tax in full so collected by them from the dealers, and the dealers in turn agree to render all the assistance possible to bring the necessary pressure to bear upon the Government in order to obtain a refund for the manufacturers; and further, that if the said manufacturers refuse to return to the dealers the said tax so advanced, we request them to appoint a representative committee to meet a committee representing the dealers of the four prairie provinces, to meet at Regina in the immediate future, so that the dealers may make a full and proper representation of their case in this connection, and so that their future position will be established should contingencies of a like nature occur in the future.

The Straw Vote

In order to have the whole province as a unit on the question a circular was sent out to every dealer in Saskatchewan detailing both the manufacturers' offer and the convention resolution, followed by the two questions:—

1. Are you prepared to accept the manufacturers' offer as outlined?

2. If not, do you endorse the convention resolution above quoted, and are you prepared to act with other dealers in this matter?

The extent of the action of the association will, of course, be governed by the replies to this questionnaire.

Other resolutions passed are as follows:

Licensing Transient Mechanics

That we request the Provincial Government, and failing that, the municipal authorities, to pass amend-

Continued on page 34

Ontario Automotive Dealers Meet

THE Ontario Automobile Retailers' section of the Retail Merchants' Association of Canada held its fourth annual convention at the Prince George Hotel, Toronto, on March 15-16. It is estimated that upwards of one hundred delegates from all the principal cities and towns of the province were in attendance.

President S. H. Rowed, of London, conducted the convention and in his address stressed the invaluable services rendered by the association during the various trade crisis. He discussed the present situation and spoke optimistically of the future of the automobile industry.

Secretary's Report

The secretary, W. C. Miller, in his resume of the years' activities of the association, said:

"I have pleasure in submitting to you my fourth secretarial report of the Ontario Automobile Retailers' Section of the Retail Merchants' Association of Canada, and am pleased to state that the membership since our last convention has very materially increased and even at the present date a number of subsidiary sections are identifying themselves and affiliating with this organization.

"We have membership, and this section of trade is represented through this organization in practically every municipality in our jurisdiction in all parts of Ontario. I have pleasure in reporting having visited Vancouver in August of last year, and had the opportunity then of meeting a large number of automobile dealers in the Province of British Columbia, who held their first annual provincial convention in November of last year. In Alberta, Saskatchewan and Manitoba similar organizations have been formed, and in those western provinces they have found the same acute problems which concern the dealers in the east. I also had the opportunity of meeting and addressing the dealers in Halifax recently and also in the city of St. John, and, like the provinces in the west, they also have held conventions, until we have every province in the Dominion organized, except the Province of Quebec, and I understand, from the provincial secretary there that he intends calling a convention of the dealers at the earliest possible moment, and when this convention is held we will at last have realized and attained a Dominion-wide organization of automobile dealers.

Western Problems More Pronounced

I found, in visiting the dealers in the west, that their problems were even more pronounced than those which we have experienced in the east, and they are looking forward to a closer co-operation, one province with the other, in the hope that we may be able to solve some of the problems that we are confronted with.

Luxury Tax

"Possibly no matter has come up during the entire year that has caused so much comment and given us more serious consideration than the action of the government in December last, in removing the luxury tax on new cars which were held in stock for future sales by the dealers, on which taxes were prepaid, and as this action by the government demanded immediate representations being made, your executive officers notified all dealers in this province that they had arranged a conference with Sir Henry Drayton, and with the commissioner of taxation, Mr. Breadner, to discuss with him the seriousness of such a step, and the enormous amount of money involved which would be a direct loss to the individual dealers unless the government refunded the tax.

"One of the largest delegations that ever visited Ottawa in connection with any legislative matters congregated in Ottawa with representatives present from the other provinces throughout the Dominion, and for the benefit of those who have not followed the representations made, copies of the address, as submitted to the minister of finance, can be had on making application to the secretary at this convention. The delegation were asked to form a small committee from themselves to meet jointly at the request of the minister of finance, with the manufacturers, and reappear before him, after further consideration had been given to certain suggestions made. The committee were then asked to return to Ottawa a week later so that the government might be able then to give a final decision and which, by this time, is well known to the dealers generally. The suggestion that the manufacturers reimburse the dealer has not proven altogether satisfactory, as will be evidenced by correspondence which we have received from various dealers throughout this province, and also from the prairie provinces in the west, and as this matter is going to be more fully discussed at this convention, I trust that some solution will be arrived at in the interests of the dealers generally.

Tire Situation

"The tire situation and certain representations will be laid before you, and we have arranged for a conference with the various tire manufacturers to discuss with them certain policies which we believe will be conducive to a higher ideal in the ethics of distribution of this particular product.

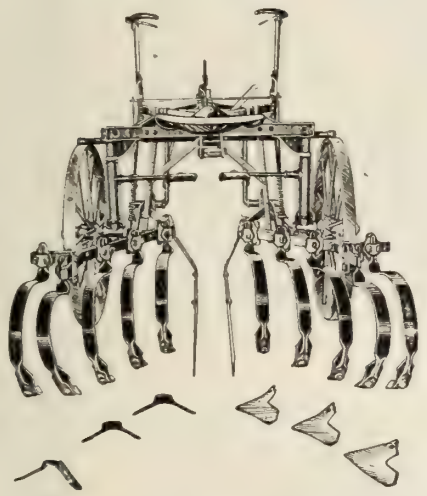
"All local branches of our organization report having done splendid work, and while not wishing to

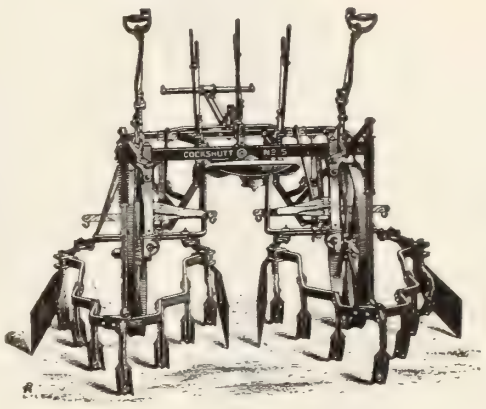
Continued on page 34

Cockshutt - Frost & Wood
Field and Corn Cultivators

Our variety of Cultivators is wide enough to meet every farming condition. They sell readily. They satisfy your customers. They open the way for the sale of other Quality Implements in the complete Cockshutt-Frost & Wood Line.

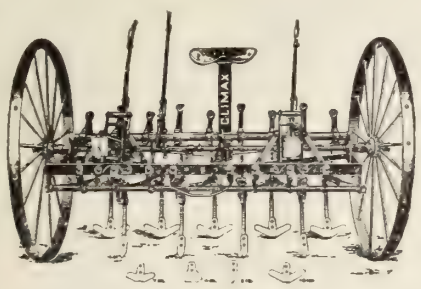
They are designed and built to do their work right—and do it year after year. They always give a good account of themselves in the field. Only the best grades of steel and iron and the highest quality of workmanship go into their construction. There is a lot of satisfaction in selling implements that give your customers the service they are looking for—and that stay sold. You'll find the Cockshutt-Frost & Wood line does that. It's a moneymaker for the dealer who realizes the value of a complete line of implements, quality built, and backed by steady, consistent advertising.





No. 2 Cultivators

This implement is supplied in either Spring Tooth or Stiff Tooth styles. It's a pivot axle cultivator—so sections can be guided by the feet of operator. An all-steel implement substantial in every detail. Levers easily reached and operated. For open field cultivation a centre section can be added.



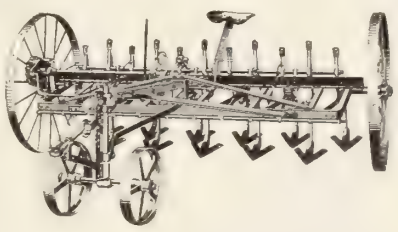
"Climax" Stiff Tooth Cultivators

Frost & Wood "Climax" Cultivators are known all over the country as the most effective weed destroyers on the market. They have exceptionally strong frames and stiff steel legs, which are fitted with 2″, 4″, 7″ or 10″ points according to the class of work to be done. Built in 6-ft. and 8-ft. sizes.

We also supply "Champion" Spring Tooth Cultivators for field work. They're very popular for preparing seed beds.

No. 5 Cultivator

Here's a real time-saver for the busy farmer. Cultivates two rows at a time at all widths from 28″ to 44″. Five handy levers make all adjustments easily and quickly. Full set of teeth, thistle blades and hillers with each cultivator. As a time and labor saver the No. 5 makes a strong appeal to the farmer.



Power Lift Cultivators

For the farmer with a tractor—or the man who realizes the convenience and saving of time when using horses — these power lift implements are supplied. They're becoming increasingly popular.

The lifting and lowering device is operated by a pull of a cord just as on a tractor plow.

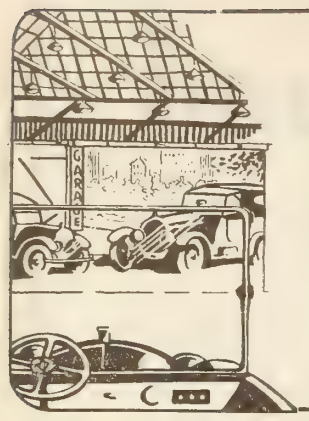
A variety of styles and sizes and a full equipment of points.

Ask our nearest Branch Office for fuller particulars —and supplies of literature describing these lines.

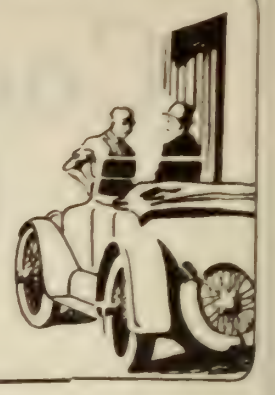
Cockshutt Plow Co., Limited
Brantford, Ontario
Winnipeg, Regina, Saskatoon, Calgary, Edmonton

Sold in Eastern Ontario, Quebec and Maritime Provinces by

The Frost & Wood Co., Ltd.
Smiths Falls, Ontario
Montreal, Que.; St. John, N.B.



SHOP NOTES FOR THE GARAGE MAN



Making the Garage 100 Per Cent. Efficient

By P. A. C. McINTYRE

FIRST let us consider just what this much used word efficiency means. It is almost impossible to give a definition of the word that would be accepted by all. The usual meaning of efficiency is the ratio or difference between the actual performance of an operation and the maximum performance which has been determined possible. The purpose of efficiency is to eliminate waste, whether it be time, energy or material.

Waste is the difference between what is and what should be. The elimination of waste should be the greatest problem in every form of business activity. Efficiency is the goal and every detail of an operation should be studied with a view of reaching this goal by producing the maximum results with the least expenditure.

The common idea that efficiency simply means doing things well is not all, for many things may be done well that could have been done well with a great saving of time, labor and material.

Make War on Waste

It does not require the installation of an expensive system, nor are the services of a highly paid efficiency expert necessary to discover many of the wastes which are to-day costing garage men untold sums. Every garageman can be his own efficiency expert. All that is required is a properly conducted, never ending war on waste in all its forms. Once started results will quickly follow, as one improvement will suggest another and the profit derived from efficient effort will daily increase. Realize that the energy expended in banishing waste is a dollar-and-cents proposition and that no business man can keep stride with the times who does not take a vital interest in this most important problem.

Wasted time is perhaps the greatest of all wastes in a garage.

Check up your own time and that of your workmen. Does your shop open on time? Are workmen kept waiting for supplies and materials? Are they taking hours to accomplish some job that could be done with mechanical equipment in half or quarter of the time? These are just two or three illustrations of many that could be given of the way time is wasted. Every garageman should and must sooner or later recognize the need of careful study of these details of modern business, for his success or failure depends upon whether proper work is done without waste or not. The car driving public make it their business to compare costs and are not slow to pass adverse judgment upon the time waster.

Modern Equipment Conserves Human Energy

Misdirected energy is another form of waste costing millions of dollars annually. Again modern equipment stands ready to stop a large portion of it. Unnecessary expenditure of human energy in doing work is costly. Labor saving machinery will pay for itself in a very short time through the saving of energy alone. A workman can only expend so much energy per day and remain efficient; overtax his physical, mental or nervous energy and the quality or volume of his work will be lowered. Rigid investigation and close checking of this important human factor with a view of conserving energy will pay wonderful dividends. As an example, try this simple experiment: Start out to walk a given distance at, say, six or seven miles per hour; in a very short time you will exhaust so much energy that it will be impossible to continue the journey without rest. On the other hand, at four miles per hour you could walk for hours without becoming exhausted and be able to cover a much greater distance in a day than if a speed of six or seven miles were set as a pace. It is false economy to have human beings waste their energy on work that could be done by modern machinery.

Wasted material is another form of waste. The enormous amount of material wasted yearly through unnecessary breakage is alarming. Recall the number of valuable articles that have been destroyed beyond repair through lack of proper tools or equipment. Material wasted through breakage is in a large measure wilful waste and the garage man jeopardizes the success of his business who permits this form of waste in his shop. Sledge hammers and inefficient methods generally are responsible for a large percentage of this form of waste. Another form of waste, which is fast disappearing, however, is that caused by inferior materials. Manufacturers have long realized that their success depends upon furnishing their trade with dependable merchandise. Repeat orders mean the same to the manufacturer as the repeated calls of the car owner mean to the garage man, and these he cannot expect to receive unless his products are up to standard. The garage man has little to fear from this source of waste. Remember "the best is always cheapest, but the cheapest is not always the best." It is poor policy to buy on price alone. Nations and business men throughout the world realize that quality pays always.

Present Conditions Call For Improved Methods

The standard of efficiency in all branches of commercial life has suffered greatly during the war, when prices were constantly advancing, but present-day conditions call for the greatest possible care and study if the readjustment period is to be successfully passed. Every detail, small and large alike, should be carefully studied to discover the quickest and most efficient method of obtaining results in the shop. Workmen, whose business is not to look for these wastes, should be thoroughly instructed as soon as a more efficient method of doing a certain job is discovered. Chance, luck and guess work have no place in the modern garage.

Make a thorough check of your cost of doing every job. That is the place to start figuring your profits. If your costs are right, profits will follow.

Modern labor saving equipment and efficient methods in the garage will go farther towards establishing confidence and the wagging tongues of the satisfied will do much towards bringing you new trade.

Bankers, jobbers and car owners are to-day paying a great deal more attention to what a garage man does than to what he has. For instance, a man starts a garage with, say, three thousand dollars in the bank, and at the end of one year his statement shows that through bad management (inefficiency) he has wasted two of the three thousand he started with. The banker would not consider him a good credit risk, the jobber would reduce his line of credit and the condition would be so evident to the car owner that he would prefer to have his work done elsewhere. On the other hand, show banker, jobber, or car owner, that you have progressed through efficient methods; that you have made a profit, and Mr. Banker will willingly loan you money for future development, the jobber will seek your orders and the car owners will not hesitate to patronize your establishment.

Suggestions and Hints for the Vulcanizer

By F. DE HORITY, Goodyear Tire & Rubber Co.

RAW gum and fabric should be kept in a cool, dry place. If possible, the stock room should be dark. It is imperative that the raw stock should not be near an open window nor in a direct draft or sunlight.

Dampness should be avoided.

Raw stocks should never be allowed to stand on the floor or on a table. Wherever possible they should be placed on a rack with a rod running through the shell on which the material is rolled.

In warm weather raw gums will sag from their own weight, even when tightly rolled on the holland. To overcome this it is advisable to turn the stock at frequent intervals.

Repair gums and fabric received in cold weather sometimes appear hard and lifeless. They are merely frozen. If received in this condition, it should be put in a warm room a short time to thaw out.

In order to get good results from a repair it is essential that the stock be perfectly clean when used.

Dirt and bloom, or free sulphur, always collect on uncured rubber. If this is not thoroughly washed off with gasoline before used in a repair, an imperfect union will surely result.

Gums and fabrics that have bloomed sometimes appear old and do not appear to be in condition to be used. If the bloom and dirt are washed off with solvent, the gum will give good results.

The quality of gums or fabric is not necessarily determined by the length of time before they start to bloom. All uncured gums are bound to bloom eventually.

All repair fabrics should be cut on the bias at an angle of 45 degrees. A repair made of fabric cut on the straight becomes hard and often bulges.

Tread stock dissolved in gasoline or solvent does not make a good vulcanizing cement. It is also costly. The most economical plan to make cement is to buy good grade cement gum.

In making cement, take a quantity of raw gum and cut it up in small pieces. Then place in a can together with a small quantity of high test gasoline and stir every hour or two until the gum has dissolved to the consistency of cream.

Cement should be thoroughly stirred each time it is used or the results are bound to be variable, due to the settling out of curing agents. It is like paint in this respect.

Vulcanizing cement, when ready for use, should be of a consistency similar to that of cream or house paint. It should flow readily.

If the cement is found very heavy when purchased, or if it becomes very thick, it may be thinned with a good grade of gasoline (one that shows no oil residue) or benzol.

Where several gallons of cement are required daily, a small barrel or churn can be used to advantage for mixing.

During the time that it is being used it should be stirred frequently. Poor results will be obtained unless this is done.

Never hang cemented tires in a draft or over vulcanizers to hasten the drying. Allow the drying process to take its natural course.

Vulcanizing cement can be thinned by the use of a good rubber solvent.

Gasoline that will not leave a grease spot on white paper after it has been allowed to evaporate is a good solvent.

Benzine or energine are both good solvents and can be relied upon.

Grain or wood alcohol is not a rubber solvent and should never be used. The cement may appear thinner, but it is of poorer quality. Instead of acting as a solvent it causes coagulation of the rubber particles. So-called "high grade" or "more power" gasolines contain substances which make them unfit for use with rubber cement Low gravity solvents contain greasy residues which are detrimental to cement.

Solvent should be added a little at a time and then stirred thoroughly before any more is added.

Gill

One-Piece Piston Ring

Identify the Gill One-Piece Piston Ring by the joint, but do not measure its merit by the joint alone.

Made in Canada

The Microscope Will Tell

If there's one little defect in a piston ring —a flaw or imperfection so tiny that it isn't visible to the naked eye—trouble will result.

Carbon accumulation; dirty spark plugs; loss of power; pitted valves; misfiring; motor knock; undue vibration; and smoky exhaust are all children of imperfect piston rings.

But in Gill One-Piece Piston Rings there are none of those little trouble-breeding defects. For through every process of manufacture they are handled with the utmost consideration and care. The special gray iron from which they are cast is heated not too hot, nor is it cooled too cool. Precision prevails throughout the Gill plant.

Thrifty motorists ask for Gill Piston Rings because they ***correct*** the troubles caused by inferior rings, and positively ***prevent*** their re-occurrence.

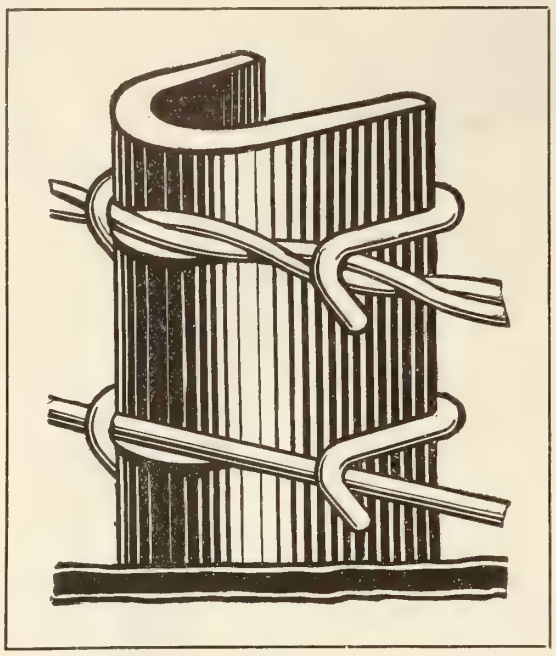
Brown Engineering Corporation, Limited

415-419 King Street West, Toronto

Carried in stock at all Canadian General Electric Company's Distributing Warehouses

Made in U.S.A. by Gill Mfg. Co., Chicago

"BURLINGTON" Steel Fence Posts



A High Class Investment That Sells Readily

You can sell the farmer no better fence investment than "Burlington" Steel Fence Posts. Because of their strength and permanence they outlast any other type of post. They are easily put in —no holes to dig or earth to fill in and the wire is quickly attached.

These are "Burlington" features that make satisfied customers. "Burlington" advertising in the leading farm papers develops prospects for you.

Write for complete details.

Burlington Products, Limited
316 Sherman Avenue N.
HAMILTON - - CANADA

New U. S. Tractor Has Chain-Drive Transmission

THE U.S. Tractor and Machinery Co., Menasha, Wisconsin, recently announced a new tractor rated at 12-20 h.p. for two 14-in. plows. An important feature and one which is an innovation in tractor design is the use of chains to obtain speed changes in the transmission.

The transmission is chain-driven throughout, except for the bevel gear through which the torque of the engine is transmitted to the primary shaft. By a special arrangement the chain-driven transmission gives two speeds forward and two reverse. Another feature of this tractor is a casting in one piece for the transmission and differential case which also forms the main frame of the tractor. The engine and radiator are supported by a channel frame bolted to the transmission case, but in the main the machine is of the unit-power-plant type.

The engine is a four cylinder, overhead valve type, with a four-inch bore and 5 1-2-inch stroke, designed for kerosene and low grade fuels. Normal speed is 1,200 r.p.m. The clutch is a 12-in. Borg and Beck, the bell housing of which is bolted to the flanged opening of the main transmission case or housing. The radiator is the cellular type with cast iron housing mounted on springs.

The outstanding feature of the U.S. 12-20 is the chain transmission. Power is transmitted through the clutch in the usual way. The clutch shaft is carried at the rear in a double-row ball bearing. This is located next to the main bevel drive pinion. This pinion meshes constantly with two bevel gears, each provided with bronze bushings and mounted loosely on the primary shaft. Between these two bevel gears is a jaw clutch which is designed to engage with either of the two gears. On either side of the bevel gears are two sprockets. The drive is transmitted from these two sprockets to sprockets on the second shaft through Link-Belt type TT-131-S chains, with a pitch of 1¼ in., with rollers ¾ in. x ¾ in., and then by another roller chain to the rear axle.

The front axle is of the automobile type and carries the frame on two semi-elliptic springs. The belt pulley is located ahead of the drive wheel, is equipped with a separate clutch and may be run in either direction.

Bennet air cleaner and carburetor and Splitdorf magneto with impulse starter are used.

This machine differs from many of the general frameless tractors in that it has a wood platform. The seat is supported on a long double-leaf spring. the latter being bolted to the top of the transmission case casting. The tractor is also supplied with wheel fenders, covers and hood.

The specifications briefly are as follows:

TYPE—Standard four wheel, two drive wheels, rear.

WHEELBASE—71 inches.

TREAD—56 inches center to center rear wheels; front wheels aligning with inside of rear wheels.

DIAMETER OF DRIVE WHEELS —45 inches.

DIAMETER OF FRONT WHEELS —34 inches.

MOTOR—Four cylinder, overhead valve, 4 inch bore by 5½ inch stroke.

RADIATOR—"Cellular" type core.

TRANSMISSION—Live axle type in dust proof housing. All moving parts enclosed and operating in a bath of oil.

BELT PULLEY—14 inch diameter, 6 inch face.

FRONT AXLE—I-beam steel with auto type knuckles; equipped with Timken roller-bearings and suspended from semi-elliptic spring.

STEERING GEAR—Heavy worm and sector with 16 inch wood rim steering wheel.

FUEL TANK — Electric welded heavy steel, 18 gallons capacity.

FRAME—4-inch steel channel.

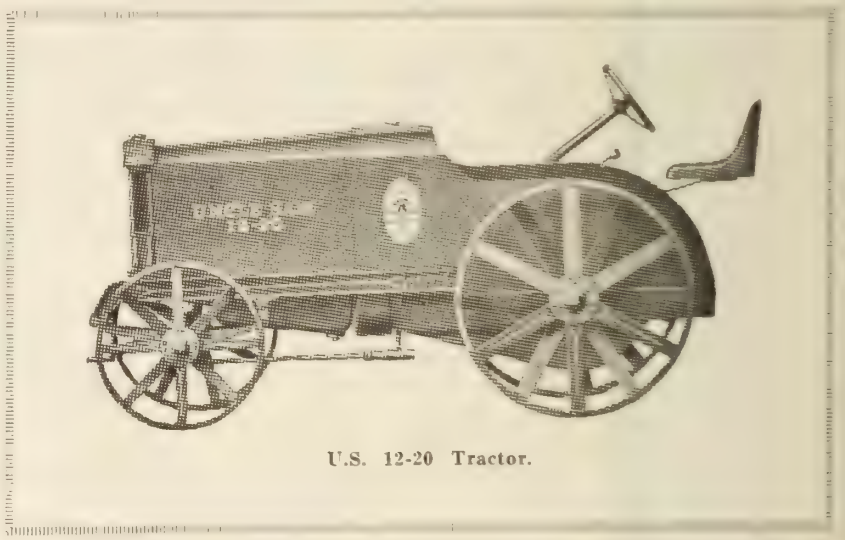
SEAT—Bucket type with cushion, spring adjustable. Seat and spring quickly removed and replaced.

WEIGHT—3,000 pounds.

SPEEDS—Two forward and one reverse. Low 2½ M.P.H. High 3½ M.P.H. Reverse 2½ M.P.H.

RATING—Belt H.P. 20.

Draw-bar pull in pounds, at 3 miles per hour, 2,000. Will pull two 14-inch plows in heavy soil at any reasonable depth.



U.S. 12-20 Tractor.

WANT GUARANTEE

THE National Shipbuilding Company, of Chicago, which was organized in 1917 to build trawlers to the order of the British Admiralty for use in the North Sea, are asking the town council of Goderich to guarantee a bond issue that has been created on the property and assets of the company. The organization is perfecting and manufacturing a flax-pulling machine of the Vessot model, on which the patent rights are held both in Canada and abroad. In asking the municipality to guarantee the bond issue the company points to its record including wage payments aggregating $400,000 for three years and nine months ending December, 1920.

Are You Canvassing Thresher Prospects?

THRESHERMEN and farmers are now checking up on grain acreage for the year and analyzing the opportunities for new threshing rigs. Are you doing the same? If not, we suggest that you check up the threshermen and farmers in your vicinity who need new machines.

Farmers this year are going to be more insistent than ever about a real job of threshing.

They will demand:

Clean threshing; thorough separation; perfect cleaning; unequalled saving.

With a Case Thresher:

They can thresh grain from the heads *clean*, by the use of the scientifically designed Case cylinder.

They get *thorough separation* from the violent agitation of the Case balanced straw Rack.

They secure *perfect cleaning* through the Case adjustable sieves, end shake shoe and full width, underblast fan.

They are finally assured of *unequalled saving of grain* and protected against possible losses that might result from faulty thresher adjustment, by the Case Grain-Saving Wind Stacker.

Send us the names of thresher prospects in your vicinity so that we can co-operate with you in developing their interest in **Case Threshing Machines.** This will result in sales that will mean more profits to you.

J. I. Case Threshing Machine Company

Dept. D215 **Racine,** **Wisconsin**

Canadian Branch—J. I. Case Threshing Machine Company, 345-9 Dufferin Street, Toronto, Ontario

CASE

TRADE MARKS REG. U.S. PAT. OFF. AND IN FOREIGN COUNTRIES

THRESHING MACHINES

Automotive Accessories *and* Implement Equipment

GEMCO TONN-O-WINGS

THE Gemco Manufacturing Company, Milwaukee, Wis., have placed on the market a new device for rear seat wind protection called Tonn-O-Wings. They are fastened to the top rest on either side of the tonneau, and are so designed, the makers say, that a 12-inch wing of plate glass can be adjusted to any position desired by the occupants. In this way complete protection from the discomforts usually found in driving is afforded.

They can be quickly and easily attached without changing or damaging the car in any way, and are made in four sizes.

MAIN BATTERY CHARGING SET

THE Main battery charging set No. 2 is a new set designed by the Main Electric Company for use in garages where there is no electric current. It generates its own electricity and is driven from a gas engine or other source of power. It is simple in construction, the makers say, and is in reality a lighting plant modified for battery charging of all capacities and voltages. It is of a standard type, with oil ring bearings and standard pulley. The switchboard is of slate and is supplied with iron supports for mounting. The switchboard is equipped with both volt and ammeter, a rheostat for regulating the charging rate, automatic cut-in and cut-out, switches, fuses, etc.

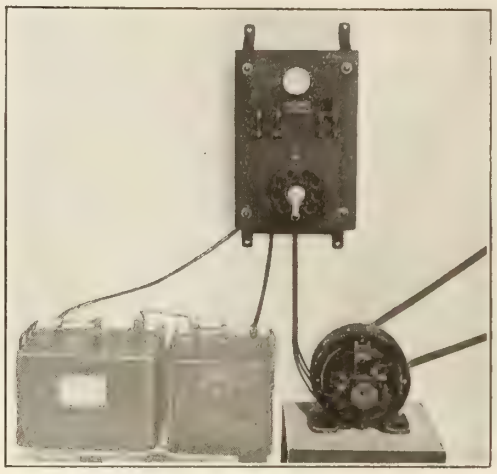
The dynamo has a sliding base to take up the belt slack, and has a capacity of 600 watts and will charge ten 6-volt batteries. When not charging batteries it can be used for lighting purposes and will supply 25 20-watt 10 candle power lamps.

KANT-SKORE PISTON

RELIEF from oil-pumping, through better compression under all conditions of motor temperature, is the chief claim made for the Kant-Skore Alloy Piston.

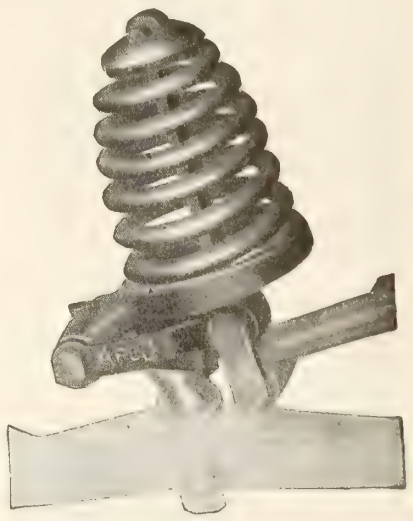
This piston has two V-shaped spiral slots, on opposite sides, which are intended to allow the piston metal to expand when heated, without increasing the diameter of the piston itself. The slots absorb the expansion. It is therefore claimed that since the piston requires the same clearance whether hot or cold it can be fitted into the cylinder with not over 1 thousandth to 1½ thousandths clearance. This small clearance, in turn, is intended to stop the pumping of oil up into the cylinder head, loss of compression, or dilution of oil in the crank-case through gas condensation. In addition the usual advantages of light weight pistons are claimed.

These pistons can be furnished to fit practically every standard make of car, and each size and style has several over-sizes. The manufacturers are the Kant-Skore Piston Co.



New Battery Charging Set, No. 2.

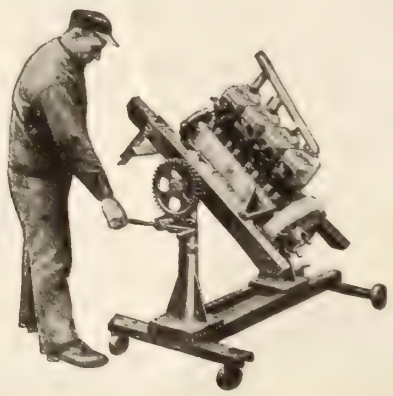
Howard Shear Attachment for Pliers.



Apco Shock Absorber.

Gemco Tonn-O-Wings.

Kant-Skore Piston.



Manley Engine Stand.

HOWARD SHEAR ATTACHMENT FOR PLIERS

THIS is a handy, practical tool that can be attached to ordinary slip-joint or combination pliers in a moment without any changing of the pliers. The makers say the blades, which are constructed of best grade tool steel 1⅛ in. in thickness and 2½ in. long, will cut medium gauge metals, including tin, galvanized iron, sheet copper and brass, zinc, wire, etc. The springs on each side of the attachment open the blades automatically. Made by the Waterloo Specialty Mfg. Co.

APCO SHOCK ABSORBER

THIS shock absorber is for Ford cars and uses a direct suspension with a large conical spring. It is made in two types only, the regular, adaptable to the touring car, runabout and coupe, and the special for the sedan and light delivery car.

In construction twelve hardened steel bushings are used, and provision is made to take up the wear by means of castellated nuts. Side sway, the makers say, has been eliminated by a patented side link.

The spring is made of high-grade heat-treated steel drawn on each end. The castings are all malleable iron, the bushings are hardened steel, the suspension link is high-grade carbon steel. It is made by the Apco Mfg. Co.

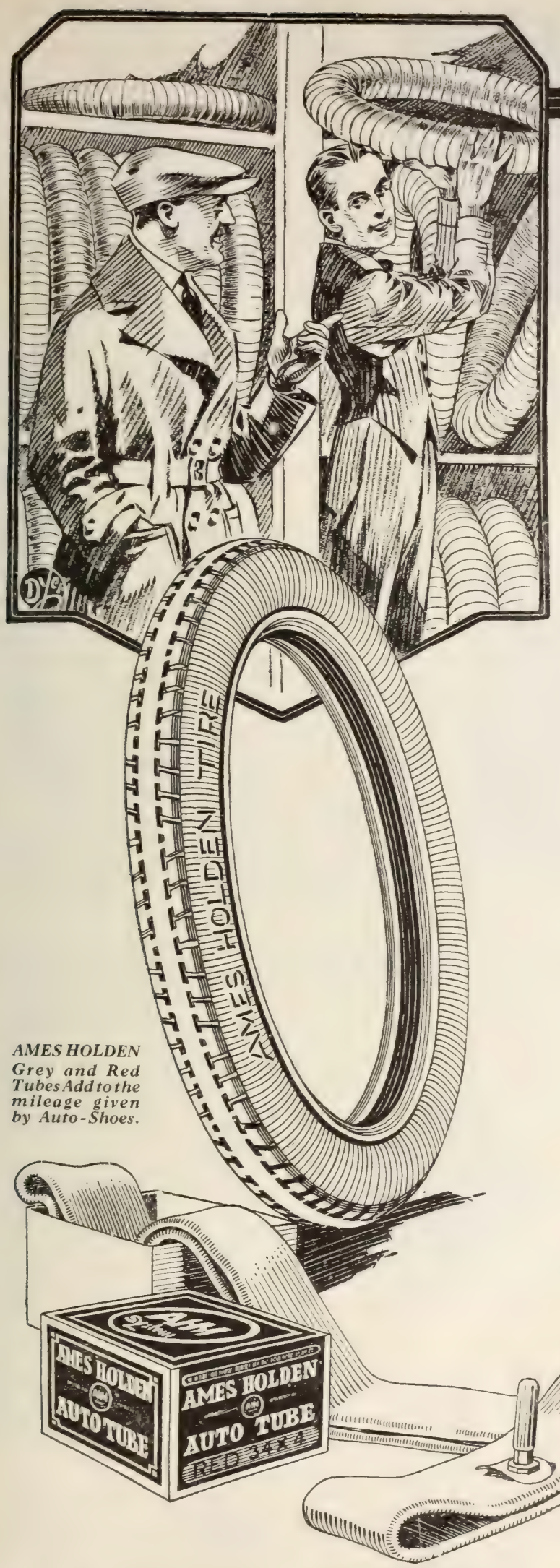
MANLEY ENGINE STAND

THIS stand is built plain and geared, portable and stationary in two sizes. The extra heavy size will mount engines up to 66 in. long and is equally suitable, the makers say, for the smallest engines made. Standard fittings are furnished, which permit the mounting of all engines regardless of the method of suspension.

In the Manley stand, the makers claim, the motor is easily and quickly mounted. It bolts to the cross arms the same as in the frame of the car, truck, or tractor. It is made rigid and heavy to support safely the engine, so that it does not shake and spring while the work is being done.

The wheels are the roller-bearing caster type, making it easy to move the stand over rough uneven floors. The stands are narrow at the base, so the mechanic can stand close to his work.

The uprights are cast iron, cored hollow with a vertical slot. A nut travels in the slot, to which one end of the locking brace is connected. One upright is fixed and is rigidly bolted to one end of the base. The other upright is movable and may be slid along the base to give the correct distance between the cross arms to take in various widths of engines. Clamps are provided under the movable upright to lock it in position when set for an engine, using the same method as on a lathe tail stock. The makers are the Manley Mfg. Co.



AMES HOLDEN Grey and Red Tubes Add to the mileage given by Auto-Shoes.

AHM System

Are You Selling Mileage?

Formerly motorists were content to accept any tire with a familiar name, without much thought or care about service.

Now the same men are buying mileage—buying it with the keenest determination to get the last yard of mileage for every cent invested.

Observing dealers quote this fact as the reason for the persistent and growing demand for Ames Holden "Auto-Shoes," which are miles better in performance than ordinary tires.

How many miles better, may be judged from the fact that the bulk of sales are coming in from the districts where road conditions are worst—where a 10,000-mile performance seems unbelievable.

Then the Ames Holden "Auto-Shoe" guarantee appeals to buyers of mileage. It's such absolute protection against defective material or workmanship. It permits adjustments without argument or red tape.

Altogether there are scores of reasons why you should sell Ames Holden "Auto-Shoes" — sell mileage. The best one, from your point of view, being the generous policy which takes care of your interests very largely. Let us tell you about it. Write.

AMES HOLDEN "AUTO-SHOES"

Cord and Fabric Tires in all Standard Sizes.

AMES HOLDEN McCREADY LIMITED

Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, London, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver.

WILSON COMBINATION MACHINE

THE Wilson combination machine is designed to accomplish seven different operations which heretofore required several separate outfits. It can be used for rebabbiting, babbit boring, reaming main bearings, running-in, burning-in, and lapping-in, cylinder reboring and spotting-in. There is also a motor bench attachment for assembling crank shafts, reaming cam shafts, etc. The machine is so designed that it is of correct height for ordinary mechanics.

The cylinder boring feature, the makers say, is radically different from anything on the market. They claim it is simple to operate and will bore a straight, true hole without taper in 9½ minutes per cylinder on slow speed. It is made by K. R. Wilson Co.

GEMCO TRI-CHEK FOR FORDS

THE Gemco Manufacturing Co. are now placing on the market the "Tri-Chek," which is a strong spiral spring that attaches between the radiator and the center of the axle of the Ford car. The makers say the usual throw-back from bumps is almost entirely overcome. The attachment not only absorbs the initial shock, but keeps the entire frame from rocking. The tension of the spiral spring between the frame and the axle tends to stop the sidesway, which is caused by the front axle floating on the spring hangers.

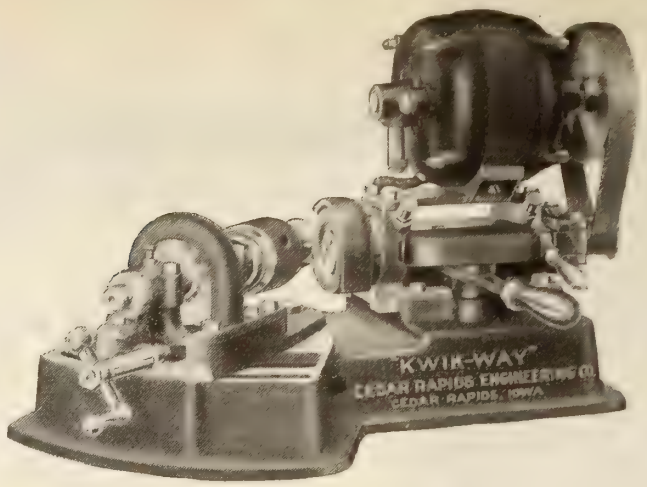
It is especially suitable, the makers claim, to delivery wagons and trucks.

FRONT TRIPLE-GARD BUMPER

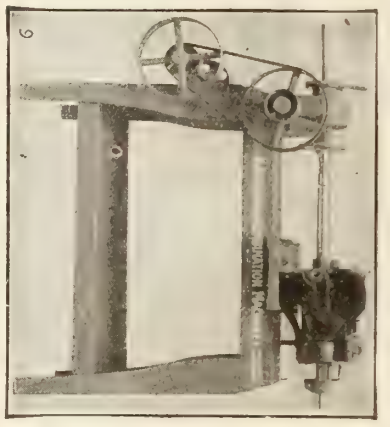
THIS bumper has three bars in front and is easily attached without changing or damaging the car. It is made of high carbon, oil tempered, spring steel, and it is claimed will withstand the severest shock without bending or breaking. The attachment is made with forged hooks. The bumper is made in two sizes. One size will fit cars of standard frame widths; the other is intended for cars of slightly narrower frame widths. The main bar is finished in black enamel; protection bars are nickel or black. The makers are the Gemco Mfg. Co.

"UTILITY" SAFETY-GAUGE TIRE PUMP

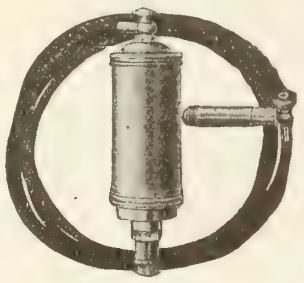
IT has been stated that 90 per cent. of tire trouble can be traced to improper inflation, and the Utility tire pump has been designed to give the correct factory pressure to the tire. With the Utility safety gauge pump it is claimed that it is impossible to over-inflate a tire. It is a combination pressure gauge and safety valve. To operate, set the gauge to the proper pressure recommended for the tire and attach pump to any convenient spark plug opening and start the motor. When the correct pressure is reached inflation automatically stops, and the safety gauge emits a sharp piercing blast till removed, and not a pound of excess air can get into the tire. One model fits all cars except Fords, for which a special model is made, called the Utility Junior. The barrel and piston of the pump is made of brass, the safety gauge is of bar brass with engraved pressure scale, 50 to 100 lbs. in 5-lb. units. Ten feet of braid-covered rubber hose, tested to 1,000 lbs., is supplied with pump, which weighs 4½ pounds, packed for mailing. It is made by the Hill Pump Valve Co.



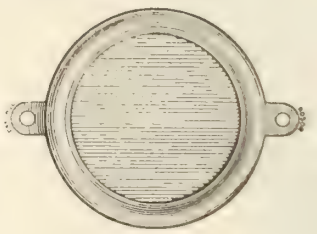
Kwik-Way Valve Facing Machine.



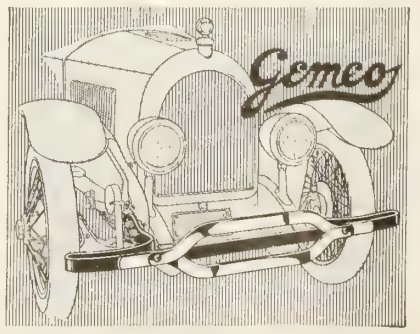
Wilson Combination Machine.

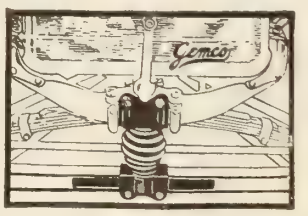


"Utility" Tire Pump



"Rosor" Match Striker.





Gemco Tri-Chek for Fords.

A NEW MATCH STRIKER FOR AUTOS

THE Rosor auto match striker is a piece of corrugated glass three inches in diameter, enclosed in a handsome aluminum frame. It may be fastened to any part of the car dash, sides or on back of front seat. Its desirability from the standpoint of convenience and its protection of the car interior from careless match scratches need not be pointed out to motorists who smoke—or whose friends smoke. Made by the Hamilton Mirror Plate Co.

TACO BALL BEARING BELT GUIDE

THE Tractor Appliance Co. announce the addition of the Taco ball bearing belt guide to their line. This belt guide is 4 in. in diameter, has 7 in. face, and is mounted on two sets of ball bearings. These bearings, it is claimed, are the same as those used in the front wheel of the Ford car, and are provided with felt rings to keep the dust out and retain grease. The frame is made of semi-steel casting, and is provided with suitable lugs to engage over the front axle in such a manner as to prevent any side slip. A set screw is provided to enable leveling of the roller should one wheel stand higher than the other. The roller is light in weight, permitting it to come up to the belt speed rapidly and without undue slippage. It is composed of a piece of Shelby seamless steel tubing with a head pressed into either end. These ends protrude beyond the roller to form flanges to guide the belt. These flanges are set at an angle of about 45 degrees to prevent injury to the belt.

The purpose of the guide is to prevent the belt from dragging on the front axle when the Fordson tractor is being used for belt work.

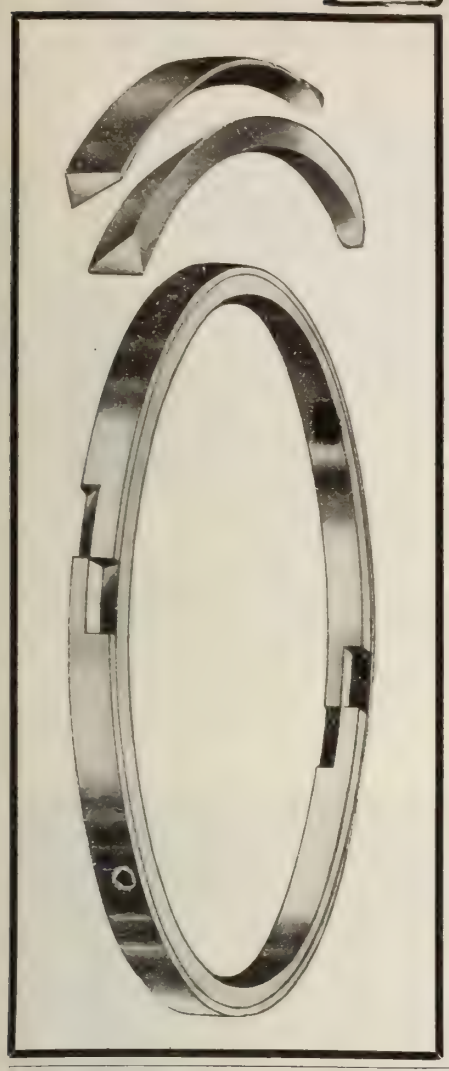
KWIK-WAY VALVE FACING MACHINE

THIS is a high-grade machine tool, the makers say, the dominant features aimed at in its design and construction being accuracy and speed. The valve to be re-faced is held by a specially designed chuck and rotated while the face is being trued up with a high-speed grinding wheel. The grinding wheel spindle is heat treated and ground to an accuracy of one-half thousandth of an inch, and runs on high-grade ball bearings, made dust proof and packed in grease. The special chuck is really two universal three jaw chucks in one, with each chuck working independently of the other. This chuck centers the valve stem at two points 2¼ inches apart on that section that works in the valve guide. This, it is claimed, insures accuracy in centering a used valve for refacing. All parts of the chuck are hardened and accurately ground to size. Both grinding wheel shaft and chuck shaft are mounted on sliding carriages, the ways of which are gibbed to compensate for wear.

The grinding wheel is moved across the face of the valve by means of a hand lever and the adjustment of the valve relative to the face of the grinding wheel is accomplished by turning the small crank at the left end of the chuck carriage. It is also claimed this machine will take any size valve up to and including a 9-16 in. stem and by means of graduations can be set to grind at any angle.

It is driven through a friction clutch pulley on the grinding wheel shaft by means of a motor. The makers are the Cedar Rapids Engineering Company.

EXCELLENCE
2-PIECE PISTON RING



It is one thing to be convinced yourself and another to convince your customer.

A replacement that satisfies your good mechanical sense may make no appeal to your customer's non-technical mind.

When you recommend the use of ExcellencE 2-Piece Piston Rings you can talk to your customer in a language he understands—the "show me" language.

The simplest way to sell ExcellencE Rings is to let your prospect examine one. He'll understand right away why you call it "The One Perfect Piston Ring." He will see why the ExcellencE forms a perfect seal for the firing chamber, why there can be no loss of compression, no leakage of oil or gas, no lost energy.

ExcellencE 2-Piece Piston Rings expand both ways. Under all conditions they are tight up against the cylinder walls.

When one examines the construction of an ExcellencE Ring the reason for this is made quite plain.

Recommend the Piston Ring that your customer can understand and have faith in—the ring that sells itself.

Lamontagne Limited, *Wholesale Dealers in Automotive Equipment* QUEBEC WINNIPEG **Montreal**

VETERAN TRUCKS

Extracts from letters received from satisfied users of VETERANS

A Coal Merchant Writes:

"The truck stands up well to all we have required of it. The engine is powerful, flexible and gives no trouble whatever. As a matter of recommendation we might point out the fact that we have purchased another of the same model...."

From a Big Wholesale Grocery Firm:

"Let me just say that it is doing very good work and is what you represented it."

What a Lumber Merchant Has to Say of His Veteran:

"I am pleased to say that the Veteran Truck which we purchased from you last June is running well.... We have no trouble going up steep grades when it is loaded to full capacity."

Consistently Overloaded But the Trucks Are Standing Up:

"I have had two 2-2½ ton Veteran trucks operating continuously hauling stone.... These trucks have hauled 68 cubic feet of crushed stone each per load or approximately 6,800 lbs. pay load.... There has been no breakage...."

From One of the Biggest Concerns in Canada:

"...glad to be able to mention that the trucks already supplied by you are giving the best of satisfaction under actual service conditions....hence our aim to standardize this truck."

EASTERN CANADA MOTOR TRUCK COMPANY, LIMITED

HULL - QUEBEC

BURD Quick Seating PISTON RINGS

The outer edges—the Quick Seating feature—lap in quickly, producing a seat in perfect harmony with the hard glass-like surface of the cylinder, resulting in maximum efficiency for this type of ring in the minimum time. Seating is accomplished in about one-fifth of the time required for plain surface rings.

One Piece—Easy to Install

The slow, laborious "lapping in" and the annoying delay before the owner can use his car is eliminated. Burd Quick Seating Piston Rings have won the instant approval of mechanics and motorists. Millions of them are in successful operation. The simple Step-Joint gives the minimum opening and prevents leakage.

Sizes up to and including 4 inches, 75c
Sizes over 4 inches—up to and including 5 inches, 90c

Burd Ring Sales Co. of Canada
322 McIntyre Bldg. - Winnipeg, Man.

BURD HIGH COMPRESSION RING CO. *Rockford, Ill.*

Spedolene is the only specially compounded lubricant in which ingredients of super-quality combine with asbestos to form a veritable cushion for gears and bearings.

Tuning Up!

Soon Spring Fever will attack Friend Motorist and he'll be having "the old bus" in to be tuned up.

See that he gets a good job, one that will give him no thought of transmission, differential or bearings when he's out on the road. Help him to realize the value of Spedolene by introducing it into the transmission and bearings of his car. Don't forget to tell him about Spedolene and why it gives long life to all surfaces exposed to friction.

The Spedolene you use will give such good results that you'll have gained another permanent customer for it.

Write for full particulars of "Spedolene" selling plan.

Spedolene Refining & Manufacturing Co., Limited
MONTREAL

I.H.C. TRACTOR PRICES

THE International Harvester Co. recently announced a reduction on all sizes of their tractors sold in Canada.

In Western Canada the prices now are as follows: International Titan 10-20, $1,250; International 15-30, $2,640. These prices are based on cash, f.o.b., Winnipeg. Prices further west are slightly higher in keeping with the added freight.

In Eastern Canada the prices now are as follows: International 8-16, $1,235; International Titan 10-20, $1,260; International 15-30, $2,700. These prices are based on reasonable terms, f.o.b., Hamilton. In the extreme east prices are slightly higher, in keeping with the added freight. A substantial reduction has been made also on all sizes of International Harvester kerosene engines.

HART-PARR DEALERS' CONVENTION

SUCCESSFUL dealers' meetings were held by the Hart-Parr Company during the first week of March at Calgary and Edmonton with a total attendance of about seventy-five dealers from the province of Alberta alone. The Hart-Parr distributor for Alberta is the Alberta Hart-Parr Company, of Calgary. This is a Canadian corporation. In addition to handling Hart-Parr tractors and tractor-drawn implements, they do quite a large jobbing business in accessories for the automobile trade. The convention at Calgary was held in their headquarters with special entertainment and banquet at the Board of Trade rooms, and at Edmonton at the Selkirk Hotel. The two days were spent in general sales and service instruction so that every dealer would thoroughly understand the Hart-Parr system of merchandising tractors. The Hart-Parr Company was represented by J. P. Gregg, Canadian sales manager, and D. E. Darrah, manager of sales promotion.

Hart-Parr Dealers' Convention.

LAUSON ANNOUNCES LOWER TRACTOR PRICES

THE John Lauson Mfg. Co. have reduced the prices on all their tractors, including the new 12-25, which was placed on the market this spring. The prices given below are f.o.b. factory. The following table shows how the old and new prices compare:

Lauson 15-30 road building tractor, without sunshade, old price, $2,525.00; new price, $2,225.00.

Lauson 15-30 farm tractor, without sunshade, old price, $2,285.00; new price, $1,985.00.

Lauson 15-25 road building tractor, without sunshade, $2,225.00; new price, $1,925.00.

Lauson 15-25 farm tractor, without sunshade, old price, $1,985.00; new price, $1,685.00.

Lauson 12-25 high powered farm tractor, without sunshade, old price, $1,595.00; new price, $1,495.00.

MOTOR INDUSTRY RECOVERING

THAT the automotive industry is again on the up-grade is the opinion of manufacturers and dealers throughout the country. The motor shows held recently at New York and Chicago were very successful and are being regarded by men in the industry as a barometer of conditions. W. A. Warren, in the Magazine of Wall Street for February, has this to say about the situation:

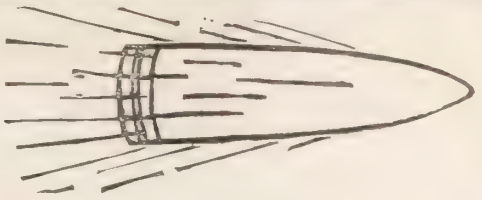
To express in a few words what is felt to be generally true, business is on the upgrade. This is not based on any mere willingness to be optimistic, but on the cold, hard facts as presented to the industry by those who attended the national shows. Everything harks back to the ultimate consumer. When he starts to buy, the business begins to move and not before. There is no use manufacturing automobiles unless people are buying them, and if this fact had been realized a little earlier there would not have been the surplus of cars accumulated which now exists. It has been estimated by trade authorities that there are probably 120,000 cars unsold and in the warehouses to-day. These are principally in the south, middle west and west. While sales have not been brisk in the east, the dealers' stocks have not accumulated to such a great extent. However, buying has started in certain territories in the country and if business conditions continue to improve as they have during January and the beginning of February, the buying wave is expected to spread over the country.

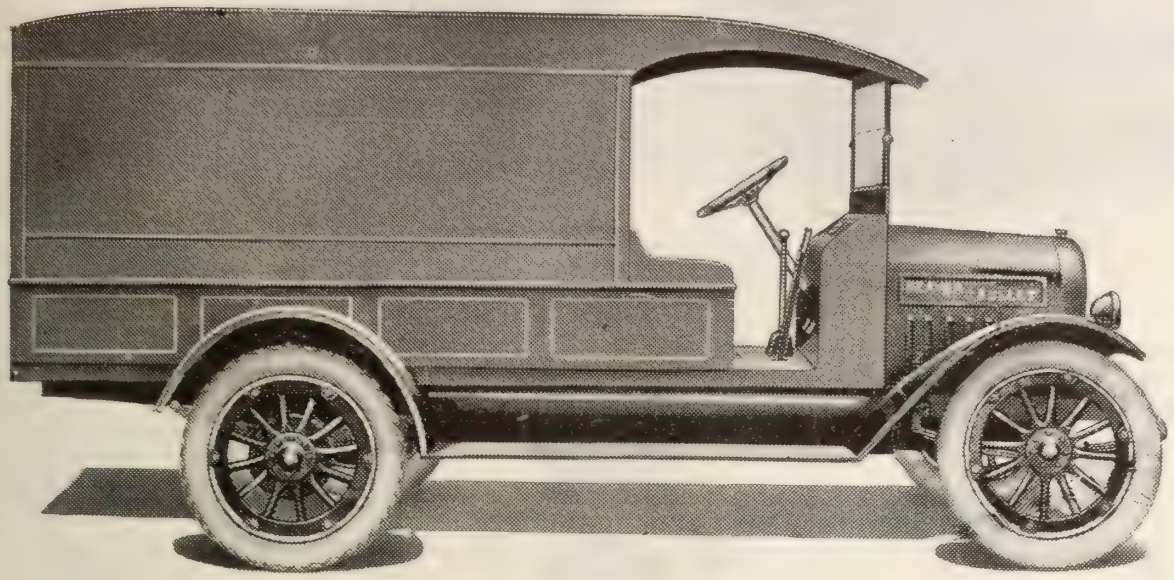
TRUCKS PERFORM WELL

ONE-TON trucks in use in the public works and garbage collection departments of the city of Calgary have made a remarkable record of efficiency, according to an elaborate report on the operation of city automobiles and trucks prepared by Robert MacKay, superintendent of the city electric light department. The figures show that the average cost per month of operating these trucks has only been $80.73. Referring to their record, Mr. MacKay said:

"I wish to take this opportunity of drawing your attention to the remarkable performance of the one-ton trucks in use by the public works department and garbage collection. The drivers of these trucks are in no small measure responsible for the satisfactory results. The majority of these drivers have had no experience in driving cars, having been transferred from horse-drawn equipment to their present positions and they have set an example that might well be copied by more experienced drivers."

BEAVER BULLET





Announcing—
The New 1-Ton Model "Beaver Bullet"

Built for Speed, Power and Endurance.

Buda Motor—Electric Light and Starting—Pneumatic Cord Tires—Body Design to Suit Your Requirements.

1½ Ton
$2875

The Price—

Chassis ***$1995.00*** f.o.b. Hamilton

A DEMONSTRATION WILL CONVINCE YOU.

2½ Ton
$3725

BEAVER MOTOR TRUCK CORPORATION, LIMITED HAMILTON, CANADA

Unquestionably Canada's Lowest Hauling Cost

Thousands of Motorists Looking for an Easy Method of Lubricating Springs

Your own experience will tell you that ninety-nine out of every hundred car and truck owners would heartily welcome any simple, effective method of spring lubrication you could suggest.

This fact makes the sales possibilities of

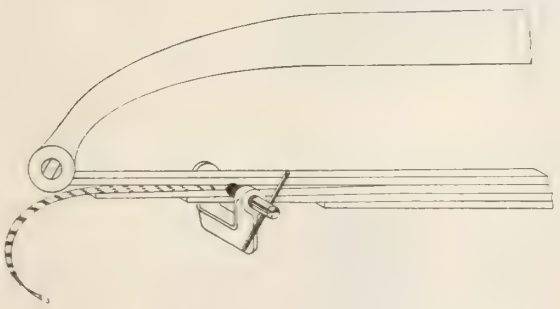
E-Z-E AUTO SPRING GREASING TAPE

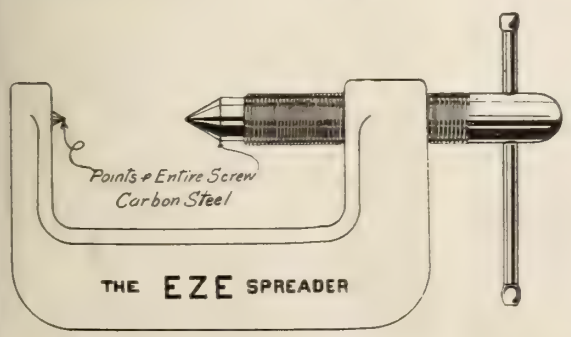
almost unlimited. E-Z-E Auto Spring Greasing Tape is effective lubrication in the simplest and easiest form to apply. Composed of two strips of perforated paper with the lubricant in between. Simply force springs apart and slip in E-Z-E Tape—no trouble, no muss, perfect lubrication.

E-Z-E Auto Spring Lubricating Tape pays you a 100 per cent. profit. Get our big money proposition.

G. TRUSSLER, Orillia, Ontario

Applying E-Z-E is just as easy as it looks in these illustrations. You don't have to take springs down, you don't even get your hands dirty.





The simplest way to apply E-Z-E Lubricating Tape is to spread the leaves of Spring apart with E-Z-E Spring Spreader.

Just the matter of a few turns on the spindle.

APEX PUMP CONNECTION

THE Apex pump connection is made by the Apex Electric Mfg. Co., who claim that it will positively not blow off the tire valve. It can be instantly attached to the tire valve by one-half turn of the lever which compresses the rubber bushing, fastening the connection securely to the tire valve, thereby permitting it to become locked, so that it will not leak or blow off. An upward turn releases the connection. There are no threads to get blurred. This connection is said to fit any tire valve and can be used on wire as well as disc wheels.

BATES TRAFFIC SIGNAL

THIS traffic signal tells the traffic officer and pedestrian the direction in which the motorist is going to turn. The makers claim it will prevent rear end collisions and side swipes. It is made from steel, finished in baked enamel and is simple, reliable and entirely mechanical in its operation. It stands out in plain sight where drivers, pedestrians and traffic officers have always looked for the hand signals. It is illuminated for night driving. By dropping the shutters at either side of the light reflector a complete parking lamp, showing a white light in front and a red light in the rear is provided when necessary. It is manufactured by the Ryan Corporation.

REMY HIGH TENSION MAGNETO

THE Remy Electrical Company recently added to their line of electrical equipment a new high tension magneto for tractors and trucks.

The Remy high tension magneto, the makers say, embodies all of the best features of design which have been thoroughly tried out, combined with certain new and valuable features. Among the most important features of design are the vertical distributor mounting and the compact impulse starter coupling. The circuit breaker and distributor are placed vertically at the rear end of the magneto, where the entire mechanism can be easily inspected by simply removing the distributor cap. The impulse starter coupling, it is also claimed, is distinctive in design and has many advantages that assure its reliable and efficient operation.

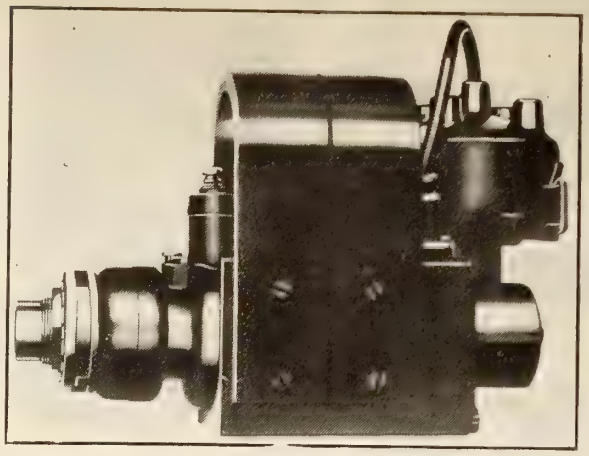
"STARTIT" VAPORIZER

A NEW electric heater and vaporizer to enable an auto owner to start his car quickly in cold weather has been put on the market by the Startit Mfg. Co., and has been called the "Startit."

It is stated that a Startit will vaporize gasoline in 12 seconds, but that better results will be obtained by allowing 30 seconds, or even one minute on an extremely cold morning.

The Startit, being made of brass, will not corrode or rust, and the walls are stated to be only ten one-thousandths of an inch thick. It is installed by drilling a 15-32-inch hole in the manifold near the distributing point and tapping with a 1-4-inch pipe tap. A switch on the cowl board and a wire from the live side of the ammeter or battery to the switch and from there to the Startit is all else that is necessary.

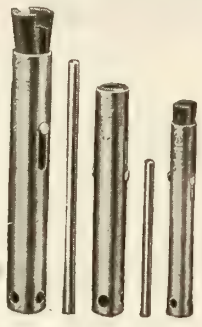
The makers claim that Startit saves the heavy drain on the batteries by reducing the prolonged use of the starter, and that it uses only 4 to 5 amperes and should not be confused with pre-heaters. They claim that pre-heating the gasoline is wrong, as when pre-heated gasoline is injected into the cold manifold condensation takes place, but that when the cold spray of gasoline from the carburetor strikes the hot Startit located near the distributing point and mixes with the hot air directly above, it is changed into a pure dry gas and ignition is instanstaneous.



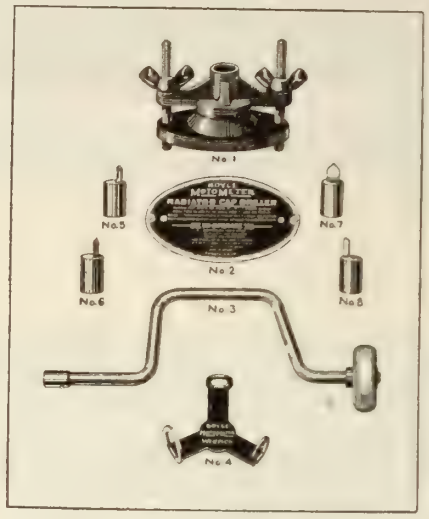
Remy High Tension Magneto

Apex Pump Connection

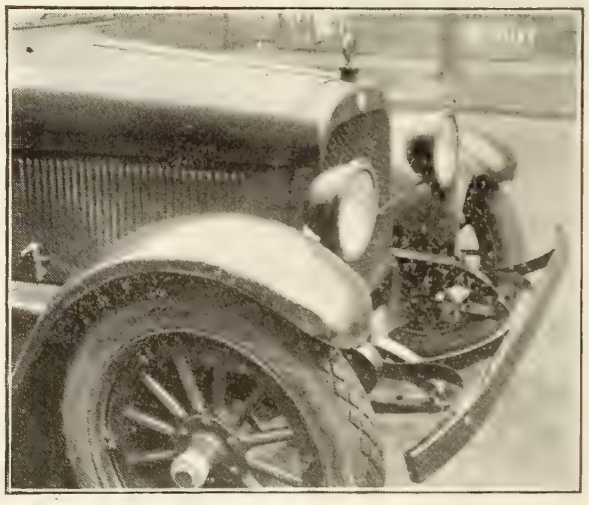
No. 482 Socket Wrench



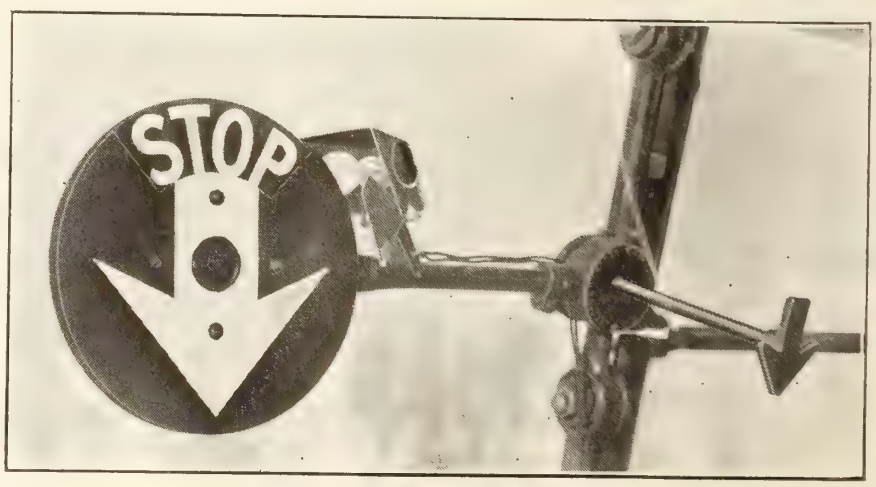
Utility Wrench Sets



Radiator Cap Driller



McAllister Wood Bumpers



Bates Traffic Signal

RADIATOR CAP DRILLER

THIS tool is manufactured by the Boyce Moto Meter Co. and is designed to facilitate the installation of the Boyce moto-meter. It is simple in construction and easy to operate.

OFFSET SOCKET WRENCH

A NEW offset socket wrench has been put on the market recently by the Goodell-Pratt Company. This wrench, as can be seen from the cut, is made specially to reach in those inaccessible places where the ordinary wrench is useless as a rule. The makers state that it is manufactured from high-grade steel and will not break, twist or bend at the crucial moment. The sockets are made in the different standard sizes.

UTILITY UNIVERSAL WRENCH SETS

THE Hill Pump Valve Co. state that their Utility wrench set has all the advantages of an expensive 16-piece socket wrench set at a smaller cost. The Utility set operates without screws or parts to get out of order. It adjusts itself automatically, as the fingers would if the strength in them were sufficient to turn the nuts. At a small additional cost a brace handle is included in the set, to turn extra stubborn nuts.

The Utility combination wrench set duplicates the advantages and parts of the Universal set, and in addition includes a brace handle for extra stubborn nuts, at a small extra cost.

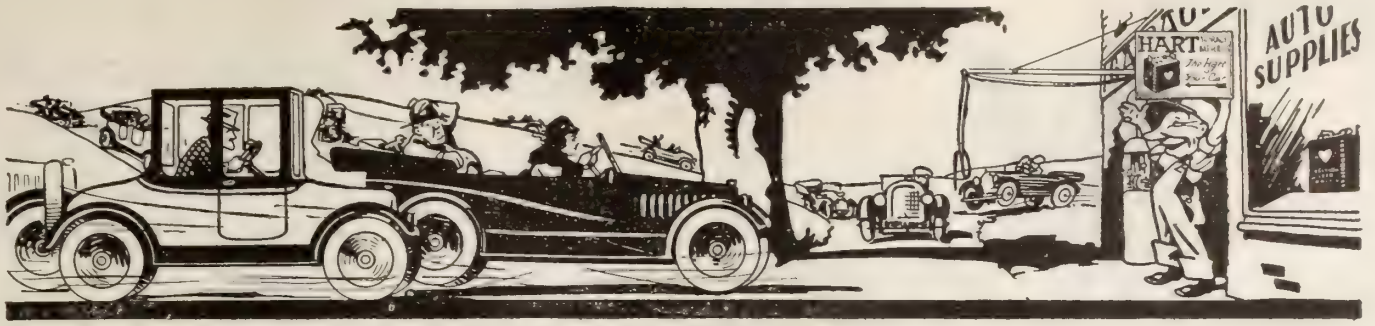
NEW SUN PROTECTOR

A NEW idea in sun protection for the motorist is just being put on the market. This consists of an inconspicuous blue window shade which is attached to the top of the windshield on the inside by two blind holders, which themselves are simply spring clips. Two spring clamps are furnished for attaching to each side of the windshield. These clamps are notched so as to permit the shade to be drawn down and fastened at ½ inch intervals. The motorist driving into the sun simply reaches up and pulls the shade down until it cuts off the direct rays from his eyes, while at the same time allowing himself plenty of vision for driving. On a swivelled windshield the shade can be drawn down to act as a vizor. The device is available for every make of car and model and is easily attached. It is made by Geo. C. Kaitting & Son.

McALLISTER WOOD BUMPERS

AFTER a series of exhaustive tests the W. B. McAllister Company has developed in the McAllister wood bumper a notable contribution to accessory equipment. By an exclusive maclamination process, the makers claim, the highest degree of all desirable bumper qualities have been combined in this bumper—particularly great shock absorbing power.

The wood bar, they also claim, has greater strength and resilience than it is possible to obtain with other commercial materials of a given weight. The bar is constructed of selected layers of hard-surfaced birch, carefully arranged to insure uniform strength. The makers say it is impossible to separate the laminations without entirely destroying the bar itself. The steel brackets for attaching to the car are heat treated and tempered to absorb the greatest impact without breaking. They are finished in black or in the natural wood finish.



Get This Business!

The HART OF YOUR CAR

The Hart Battery

Thousands of car owners are thinking of getting their cars out. In this frame of mind they will be keenly interested in the news of the Hart Battery—the better battery that ensures quicker starting, brighter lighting and better ignition.

We are showing them that Hart superiority is the achievement of 30 years' study, and that the HART Battery is well-known in 12 countries.

There's going to be a demand for the HART Battery that cannot be satisfied with any other make, and dealers who want to get this business should ACT AT ONCE.

Large stocks are carried in every province by our distributors. Quick service with no duty or exchange to pay.

Hart Battery Company, Limited

Sales Offices, Drummond Bldg., Montreal. Works at St. Johns, Que.

Moisture cannot gather on the interior of your Windshield

KLEARSIGHT
TRADE MARK

An application of Klearsight—just a little on a damp cloth, applied to the interior, rub lightly off when dry, then polish—leaves a transparent waterproof coating wherever applied.

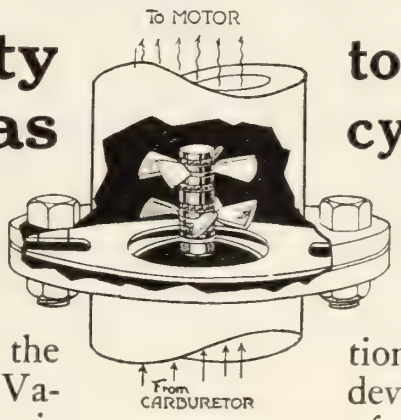
Klearsight also puts a wonderful polish on brass and nickeled parts—in fact, it is the all purpose cleaner for motorists.

Write and see if there is an opening for Klearsight Agency in your district.

PASZNICKI BROS., LIMITED
21 Richmond St. West, Toronto

Gasoline down 25 to 50%—A G.M. Gas Vaporizer will do it.

Plenty of gas to every cylinder



One of the things the Vaporizer does is distribute gas equally to all cylinders. It keeps the whole power plant of a car working to full capacity under the very best conditions for the development of power and speed. It utilizes every last drop of gasoline, passes it on to the motor as fine vapor quickly and wholly combustible.

The Vaporizer means a smooth-running car, greater mileage, lower fuel cost.

We empower our agents to guarantee a fuel saving of at least 25 per cent. This guarantee is a wonderful sales help, for every Vaporizer makes good. Get in on the ground floor with this exceptional proposition.

The Canadian Auto Accessories Company
70 LOMBARD STREET, TORONTO

You Can't Get Away With It!

DON'T take chances. Use the McKee Standard Lens that complies with the new "no-glare law" and adds class to your car. The lens is one solid piece of crystal-glass scientifically designed—needs no dimmers —no attachments.

McKEE Standard LENS

It saves the light that is wasted by the ordinary window glass lens and adds it to the intense beam of light which is concentrated and projected through the horizontal prisms down close to the road bed for 600 feet ahead. And not a ray of this bright white road beam can go above 42 inches from the ground to blind approaching drivers.

Why risk your life and those of others with make-shift devices that weaken the light to comply with the law? For safety's sake use the McKee Lens—the lens that combines an intense road beam with an adequate side light.

Remember that the McKee Lens is legal. It is to your advantage to equip your car with the McKee now.

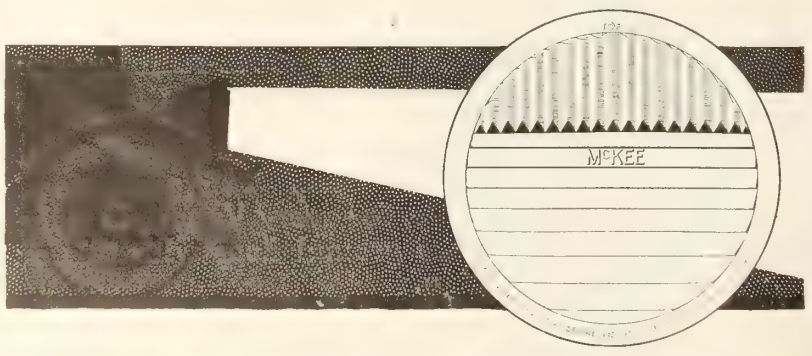
Garage Supply Co.

23 West Richmond Street, Toronto, Ontario, Canada

Distributors

McKEE STANDARD LENS

Made by McKee Glass Company, Jeannette, Pa.



NEWS — OF THE TRADE FOR THE TRADE

ONTARIO

OTTAWA.—J. O'Grady is contemplating building a new garage in the near future.

ELORA.—T. E. Bissell, of the T. E. Bissell Company, attended the National Tractor Show held at Columbus.

THOROLD.—The Thorold Automobile Club has been revived in affiliation with the Ontario Motor League.

HAMILTON.—Wentworth County recently purchased from the Sawyer-Massey Company several machines for road building.

SANDWICH. — The Essex County Council, at a meeting recently, authorized the expenditure of $650,000 to build good roads.

BEAMSVILLE.—The Monarch Industries, Ltd., has been incorporated with a capital of $30,000 to manufacture registers, carburetors, motors, etc.

PICKERING.—S. J. Collacutt, automobile and tractor dealer, is building a new garage and showroom. The building will be 50 x 60 feet, constructed of concrete.

STEVENSVILLE. — P. Litchenberger is operating an implement business here. He handles John Deere implements and reports that business is good.

GALT.—A new firm has been established here for the manufacture of tools, gauges, known as High Speed Tools, Ltd. L. W. O'Conner has been appointed manager.

TORONTO.—H. B. Moore, Ltd., distributors of Dodge passenger cars, have taken over the premises formerly occupied by the Canada Motor Car Co. at 577-579 Yonge street.

OTTAWA.—S. C. Cook, tire dealer, has moved to fine new premises at 239-241 Queen street. All the equipment necessary for a modern automobile tire service has been installed.

PETERBORO.—J. J. Duffus, proprietor of Duffus Motor Sales, at the convention of the retail automobile dealers, held in Toronto recently, was elected president for the ensuing year.

BRANTFORD—A tractor school was held recently at Mitchell's garage and was well attended by young farmers and local automobile mechanics. An expert from London conducted the course.

ST. CATHARINES.—G. H. Anderson, power farming dealer, recently received a carload of tractors, of which two are already sold. The remainder he expects to dispose of before the general plowing season begins.

OTTAWA.—Charles C. de B. Aumond has been appointed sales manager of the Dixon Motors, Ltd. Before going overseas he was associated with Pope-Hartford, Montreal, and after his return was associated with Ginsberg Motor Co., Montreal.

MANITOBA

KALEIDA.—S. E. Pettitt has opened an automobile and tractor repair shop.

WINNIPEG.—The Consolidated Motors Ltd. will erect a garage at the corner of Portage Avenue and Victoria Street at a cost of $80,000.

DAUPHIN.—A tractor school was held by the John Deere Plow Co. on March 9, 10, 11, 12, at the Sutherland and Stetck, Ltd., garage.

CARBERRY.—A general garage and repair shop has been opened by J. C. Thorenton. All kinds of repairs, including automobile painting, will be handled.

WINNIPEG.—The Western Canada Automotive Equipment Association has been chosen by the Western automotive dealers, who held a successful exhibition recently, as the permanent name for their association. At a recent meeting E. W. Hamilton was re-elected president and W. L. Williams elected secretary, and plans were discussed for an equipment show in 1922.

SASKATCHEWAN

WATROUS.—G. S. Parsons has sold out his garage business.

YORKTON.—D. MacPherson, manager of the local Massey-Harris branch, died suddenly at his home on March 1.

EASTEND.—The John Deere Plow Company held a tractor school in the showrooms of Wright and Jickling. A Waterloo Boy tractor was used and the school was conducted by F. Young, from the Deere organization.

ALBERTA

MEDICINE HAT.—A garage, two cars and a tractor, the property of the Canada Land and Irrigation Company, were destroyed by fire here recently.

MEDICINE HAT—The Hilts Stooking Machine Company will erect a factory here for the manufacture of stooking machines and stook loaders.

EDMONTON.—George Riach, who has been with the Edmonton branch of the McLaughlin Motor Car Co., has become associated with the Motordrome, Ltd., 103rd street, as general manager and half owner.

BRITISH COLUMBIA

MONCTON, N.B.—The warehouse and machine shops of the Record Foundry and Machine Co. have been destroyed by fire.

LANGLEY PRAIRIE.—P. F. Cagpacci, automobile dealer, is building a fine new garage. The new building will be 40x70 feet and will have accommodation for twenty-five cars.

NEW WESTMINSTER. — W. J. Warwick has taken over the management of the New Westminster branch of the Reo Motor Car Agency, of Vancouver. Mr. Warwick is on the Board of Directors of the said company.

YUKON TERRITORY

DAWSON.—W. Aldcroft, for a long time in charge of the C. K. M. machine shops at Bear Creek, has opened a garage and machine shop and will handle all kinds of automobile and truck repairs.

APPOINTED MARMON DISTRIBUTORS

THE British and American Motors, Ltd., Toronto, formerly the Wolesley Motor Car Co., have been appointed distributors for the Marmon cars.

HOW TO KILL ANY RETAIL BUSINESS

1. Make up your mind that it is the meanest business on earth and explain this to everybody you meet.

2. Do just as little as you can day by day; let the dust collect, litter accumulate, bills stack up, and accounts go uncollected.

3. Go around the store in your shirt sleeves, smoking a pipe or cigar, and encourage the help to do the same.

4. Read a newspaper, or stand and talk with a friend while customers wait.

5. Never try to please a dissatisfied customer. Give him to understand that what is done is done, and there is no use talking about it.

6. Don't advertise; and if you do, go to it in spasmodic gasps.

7. Buy everything of everybody who comes in to sell to you, especially if their proposition includes loading you up with more goods than you can get rid of in a year.

8. Carefully avoid anything in the way of original promotion. Be a follower and not a leader.

9. Cry hard times, high prices, the war, the lack of public spirit on the part of the town's citizens, and the meanness of people in general.

10. Don't take any interest in your customers. Be sure when an old customer asks to have a package sent home to say: "What name, please, and where?"

11. When goods are out, don't order for a few days so you will have a chance to tell part of your customers they better go somewhere else because "You're just out."

12. When you promise to send goods at a given time be sure and forget about it. When people ring you up act as though you didn't remember what they are talking about.

13. Use such words in your advertisements as "Stupendous values," "Mammoth-bargain opportunity." Such bunco doesn't mean anything, but it might impress some folks while it prejudices others.

14. Dun your best customers up hill and down dale whenever they are a little bit slow, and let the rest slide.

15. Get into a rut and refuse to get out.—The Show Globe.

MOTOR OUTPUT NEARLY NORMAL

DETROIT, March 28.—One hundred per cent. production schedules will be put into effect in practically every automobile plant in Detroit, beginning next Monday, it was learned to-day in a canvass of the factories.

Manufacturers are optimistic over the future of the industry. Almost every plant reported orders coming in rapidly. Men are being hired every day, and departments are being built up to a normal basis.

The Paige Detroit Motor Car Company will resume full time production Monday.

Officials of the Hupp Motor Car Company said that production will be increased to normal next Monday.

Increase 50 Per Cent.

Production in the Hudson and Essex plants will be 50 per cent. greater in April than it was during March, an official stated. The company acknowledged that it has more orders on its books at present than it can fill in the next 60 days.

All plants of the Studebaker Corporation, which have been running on a five-day-week basis, will be operated six days the first week in April.

During April production in the Packard plant will be 50 per cent. greater than it was during the last three months. In May it will be increased to 100 per cent. more than during January, February and March.

Open New Plant

The new plant of the King Motor Company will be opened next week.

The Maxwell Company will increase production to a 45 per cent. basis next week.

Production in the plant of the Chalmers Motor Car Company will be 75 per cent. greater during April than in March, said one official.

Officials at other plants, although admitting that production will be increased April 1, refused to give actual figures.

The Ford Motor Car Company has received orders for 90,000 cars to be delivered in April, as against about 80,000 in March.—Globe.

SUCCESSFUL AUTOMOBILE WEEK

OTTAWA has just drawn the curtains on a most successful automobile week. The experience of most dealers has been that there has been an unusually heavy demand for the moderate-priced car. There is not the call this year that there was last for the pleasure and touring cars. The big call is for cars for transportation purposes only. Ottawa is growing rapidly and the outlying districts are receiving their fair quota of population. It is mostly these people who are buying the cars to take them to and from their places of business in the city.

In addition to the increased demand for low-priced cars there has been active trading in parts, particularly during the last couple of weeks, and while some dealers are complaining that business is dull, the majority are well pleased with the business they are doing now.

It had been planned to have a big parade in connection with automobile week, but owing to the uncertainty of the weather this was postponed indefinitely.

INSPECTS RUGGLES PLANT

C. R. CLARK, representing a large automotive firm in London, England, recently made an inspection tour of the Ruggles Motor Truck Company's plant at London, Ont. Mr. Clark was much impressed with the factory, the Ruggles trucks and the company's method of doing business. Mr. Clark was tendered a luncheon by the directors and executives of the Ruggles Co. at the London Club. The Ruggles Company expect to export numbers of trucks to Britain in the near future.

FRANK W. RUGGLES
President Ruggles Motor Truck Co.

This is the Business-Builder for You

This life-sized boy and his big slate with a new and interesting little saying on it every other day; it's the feature that is producing sales, getting people talking and bringing new business to En-ar-co Dealers all over the country.

Have you got it? If not, let us tell you about our system of supplying it, along with the interesting epigrams that make it a real business-getter.

Use the coupon below at once. Your big season is just beginning. You are anxious to make it the best you have ever had. The En-ar-co Boy and Slate Sign will help you. Tear out and mail this coupon immediately to the En-ar-co Branch nearest you, and full and free particulars will be forwarded you by return mail.

CANADIAN OIL COMPANIES, Limited

Branches:

Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary.

To Canadian Oil Companies, Limited

Nearest
Branch
.....

Tell me without obligation how I can secure the En-ar-co "Boy and Slate" and Epigram Service.

NAME .....

STREET .....

POST OFFICE .....PROV.....

I AM IN THE .....BUSINESS
(Indicate kind of Business.) MTI 4

It's a pleasure to sell Columbia Dry Batteries

WHETHER for bell ringing or engine ignition, it's a pleasure to pass out to the customer the exact Columbia Dry Battery his needs require.

For every Columbia sale helps you build more goodwill for your store.

Think of the different jobs Columbia Dry Batteries do!

—ring doorbells
—buzz buzzers
—ignite gas engines
—furnish ignition for Fords when starting
—provide ignition and lighting for motor boats
—light tents and outbuildings
—fire blasts
—run toys
—make telephones talk up.

Makers of Columbia Storage Batteries

MADE IN CANADA

Fahnestock Spring Clip Binding Posts on Columbia Cell Number 6 without extra charge.

CANADIAN NATIONAL CARBON CO.
Limited
TORONTO AND WINNIPEG

Columbia Dry Batteries
—they last longer

1262113A

Stunts in Selling Accessories

IN a country where one person out of every twenty-four owns an automobile, it is only to be expected that there should be keen competition in the retailing of automobile accessories, says Ernest A. Dench, in Motor World. Competition always makes for progressiveness, with the result that most Canadian automobile accessory window displays are a credit to their owners.

These are my impressions after covering every section of Canada (Maritime Provinces excepted) over the Canadian Pacific Railway. Several of the display methods that favorably impressed me will be found below.

The Tire as Display Fixture

Emson's, Medicine Hat, Alta., laid an auto tire flat on the floor in the middle of the window. Small accessories, such as spark plugs, were grouped inside the tire circle. This method, simple though it was, was an improvement over the hodge podge arrangement of small accessories that are too often seen. The method permitted of it being elaborated upon with a tire at each side and different accessories for certain purposes inside each tire. The small articles are oftentimes the hardest to display because there are so many of them competing for window display attention.

The Non-Skid Chain Trim

J. & T. M. Piper, Fort William, Ont., featured non-skid chains in one of their show windows. Non-skid chains were hung across the rear, just above the level of the eye. On shelves above were cardboard cut-outs that were supplied by the chain manufacturer, while another cut-out occupied the floor at the rear center. Hanging partially out of their cotton bags at either side were more of these non-skid chains. Down in front were groups of motor oils, with oil cans and other accessories placed on the floor in between. Along the beveled edge of the window glass was a non-skid chain, outstretched from end to end. The window glass was covered in the same manner by two non-skid chains, placed about two feet apart.

Free Pennant Stunt

Some tourists are great pennant fiends, and the McRory & Millar Co., Virden, Man., set themselves out to attract this desirable custom by a special offer, which was given display publicity in the local newspapers. Here is the announcement containing the offer in question:

"Automobile Owners—Get a Pennant Free.

"Follow the good roads to Virden and then direct your car to this store; purchase to the value of $1.00 or over anything in this store and receive

FREE
A PENNANT FOR YOUR CAR

"We make this offer to extend our acquaintance list. Every car should have a pennant, get it here, free."

The value of the pennant was somewhat exaggerated—as it was the kind one can buy in any Woolworth store in Canada for fifteen cents—but it was the character of the offer that counted rather than the value of it. The walls of their window were decorated with different colored pennants of Virden.

The Free Battery Drink

Engineering Services, Ltd., Toronto, Ont., resorted to stunt tactics in order to increase its battery business. There was a large water cooler in the middle of their show window, the cooler being filled with fresh filtered water. A card laid against the water cooler announced:

"Give your battery a drink. It's free."

The cooler was surrounded by batteries for different types of machines.

Ensuring Prompt Counter Service

To enter the establishment of Costello & Crowe, Ottawa, Ont., is almost like rummaging around a department store. Placed on their counters for quick service were recharge batteries, with the price tags attached.

An All-White Color Scheme

Costello & Crowe's window was devoted to a display of automobile nonglare lenses. The trim was covered with white crepe, the lenses being placed at equal distances apart. The crystal white of the lenses and the snowlike whiteness of the crepe paper provided an excellent color contrast.

APPOINTED BRANCH MANAGER

ANNOUNCEMENT is made by the J. I. Case Plow Works Co. of the appointment of C. S. Heimbauch as manager of their Des Moines branch.

C. S. HEIMBAUCH

Mr. Heimbauch is well known to the implement trade. He has been connected with the implement business since 1897.

INTERNATIONAL DAIRY EXHIBITION TO BE HELD IN ARGENTINE

AN international dairy exhibition is to be held at Palermo (Buenos Aires), from May 8 to 27 of this year, by the Argentine Rural Society. According to the pamphlet published by the society giving the program and rules, the exhibition will be divided into three sections: Dairy products, instruments, machines, and installations for the dairy industries; and exhibition of cattle, ewes, and goats.

CREAM SEPARATOR SUPREME

THE Danish government recently instructed the late Professor Fjord to make comparative trials between the different methods of separating cream from milk and making butter therefrom. After a series of trials and tests extending over a period of twelve months, Professor Fjord reported that with a cream separator it required twenty-four and four-tenths pounds of milk to make one pound of butter, while by the old-fashioned system of skimming thirty-two and five-tenths pounds of milk were required, the difference being 34 per cent.

MAYBE ADAM LAUGHED AT THESE

"Shay, offisher, where's the corner?"

"You're standing on it."

"Sno wonder I couldn't find it."—Puppet.

* * *

"What do they sell in that last garage besides gasoline, father?"

"'Besides,' my son? You mean 'instead of.'"—Life.

* * *

According to an evening paper the lady who has just become Duchess of Westminster has "one son, a boy." On the other hand, the Duke himself has two daughters, both girls.—Punch (London).

* * *

Bill—"Just happened to run into an old friend down-town."

Phil—"Was he glad to see you?"

Bill—"You bet not. I smashed his whole right fender."—Cornell Widow.

* * *

"This is my car," exploded the irate tourist to the garageman, "and what I say about it, goes—see?"

Just then a dirty-faced machinist crawled out from under the dead machine and said, pleadingly, "Say 'engine,' mister!"—Cartoons.

* * *

"Cousin Henry," gasped the country visitor from Woodpecker Flats, "you just missed that man."

"Can't help it," bellowed his city relative, throwing her open another notch. "Haven't got time to go back and try again."—American Legion Weekly.

* * *

"I don't like your heart action," said the doctor applying his stethoscope. "You had some trouble with angina pectoris, haven't you?"

"You're partly right, doc," answered the young man sheepishly. "Only that isn't her name."—Case Eagle.

* * *

Frederick was sitting on the curb, crying, when Billy came along and asked him what was the matter.

"Oh, I feel so bad 'cause Major's dead—my nice, old collie!" sobbed Frederick.

"Shucks!" said Billy. "My grandmother's been dead a week and you don't catch me crying."

Frederick gave his eyes and nose a swipe with his hand and, looking up at Billy, sobbed despairingly:

"Yes, but you didn't raise your grandmother from a pup."—Harper's Magazine.

* * *

"Why do you turn out for every road hog that comes along?" said the missus, rather crossly. "The right of way is ours, isn't it?"

"Oh, undoubtedly!" answered he, calmly. "As for our turning out, the reason is plainly suggested in this epitaph which appeared in a newspaper recently:

"'Here lies the body of William Jay,
Who died maintaining his right of way;
He was right, dead right, as he sped along,
But he's just as dead as if he'd been wrong.'"—Boston Transcript.

Cletrac
TANK-TYPE TRACTOR

SPECIFICATIONS:

Horsepower: 12 at drawbar, 20 at belt-pulley.
Length: 96 inches.
Width: 50 inches.
Height: 52 inches.
Weight: 3,455 pounds.
Turning Circle: 12 feet.
Traction Surface: About 800 square inches.
Centre to Centre of Tracks: 38 inches.
Belt Pulley: Diameter 8 inches, face 6 inches.

The World's Best Tractor Proposition

Cletrac is the ideal tractor for Canada. It makes the most of our short seasons and means bigger crops and more profit-money for every buyer.

Cletrac is the **tank-type tractor.** There is nothing else like it—nothing to take its place. Cletrac does **more kinds of work more days in the year.** Every farm, big or small, needs a Cletrac. Every farmer is a Cletrac prospect.

Our increased production makes certain that there will be plenty of Cletracs for all dealers this year. Our enlarged plant is big enough to meet every demand.

—And Cletrac is backed by the biggest advertising campaign we have ever put on in Canadian farm papers. Don't forget that.

We have a gilt-edged proposition for good dealers. Let us tell you about it. Ask for our book, "Selecting Your Tractor."

THE CLEVELAND TRACTOR COMPANY OF CANADA LIMITED

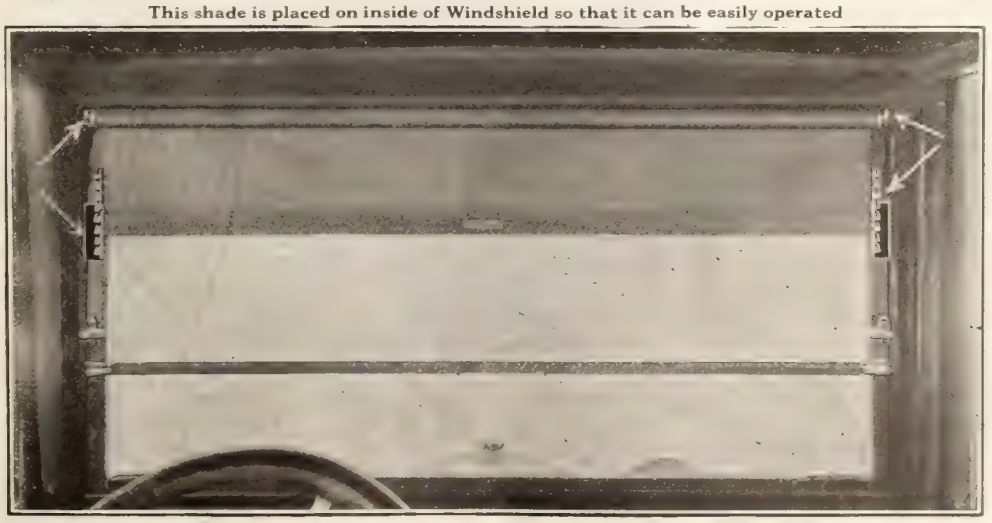
Home Office: 21 Ottawa Street, Montreal
Western Sales Office: 261 Fort Street, Winnipeg

A Brand New Comfort Idea!

Every motorist you know, or can get to know, is a prospect for this windshield shade. A brand new idea—a new comfort, convenience and safe-driving device.

Eliminates the danger of driving in the face of the blinding sun, or headlight glare at night. Relieves eye-strain, adds to comfort. It attaches quickly to any windshield, as the attachments are spring clips. No bolts or screws are needed, and it can be attached to any windshield in three minutes, without tools or experience. Inconspicuous when not in use. Adds to appearance of car when drawn down. Can be adjusted to suit driver. Sell one in your district and it will sell the rest.

This shade is placed on inside of Windshield so that it can be easily operated



This shade sells to the user for $5.00.

Write for dealer's discount and agency proposition.

GEO. C. KAITTING & SON, 54-56 Ainslie Street, GALT, ONTARIO

Putting Personality Into Tractor Sales

By D. E. DARRAH, Hart-Parr Co.

"CAN you rent me a car with driver to take me over to the village of Valparaiso, about twelve miles north of here?" I asked a garage owner in the city of Lincoln, Neb., one day last summer. "Sure thing," he replied. "Bill," he called to a young fellow working in the garage, "know the way over to Valparaiso?" "Nope," answered Bill, "never been out there." "All right," replied the garage owner, "just drive down to the end of Blank Street and you will see an arrow road sign pointing north on which are the words, 'Twelve miles to Valparaiso—Jim Pokorny—Eaterup Tractors,' Just follow those road signs and they will take you right into Valparaiso."

"That's mighty interesting to me," I remarked, "as I happen to be going out to Valparaiso to see this man Pokorny." "Well," replied the garage owner, "if you drive on any road within forty miles of Valparaiso you will find that guy Pokorny's yellow road signs directing you to his place of business, and furthermore he gets the business. Why that fellow even delivered repairs to his tractor owners last spring by aeroplane in order to give them quick service. Can you beat it?"

In a few minutes I hit the trail seated in a jitney beside a wild-eyed young chap who had driven an aeroplane in France, and who seemed determined to make the jitney reach Valparaiso via the aeroplane route. Sure enough on every mile of that road to Valparaiso there was a yellow arrow sign directing us to Jim Pokorny, who sold Eaterup tractors.

The tow-headed pirate who presided over the destinies of the jit tarried not on the way and in a very few minutes we rolled into the little town of Valparaiso, situated in the heart of a splendid farming district and boasting a population of 560 energetic citizens. I was much interested in getting a first-hand view of this man Pokorny, who in two years by unique methods all his own had placed scores of tractors in the small territory around his town. The first look at his place of business told one reason for his success. In that little town, Jim Pokorny has a large, modern, power farming building. On one side of the building, partitioned off from the rest, and running the full length, is a completely equipped blacksmith and repair shop, where he is able not only to take care of all repair work for his tractor owners, but rebuild machines as well. The rest of his power farming building is divided into a large storeroom, display room and office. The whole arrangement is very attractive and serviceable.

Telling the World

When we drove up to the building, Jim had just finished unloading a carload of tractors, and instead of quietly slipping them down a back alley he was "telling the world" that he had tractors to sell. He had just brought the entire carload down the main street of the town and backed them in front of his place of business so that every farmer who drove past his place of business knew that he had tractors to supply their immediate wants. Herein lies another secret of Jim's success for he never fails to tell the public what he has to sell and how it will solve their problems. Advertising and publicity are fundamental with him.

We met Jim in the doorway where he was just bidding goodbye to a farmer who had come in after some repairs. We introduced ourselves and shook hands with better than six feet of clean-cut, clear-eyed, aggressive power farming specialist—for that is what Jim is. I told him that I had heard how he had corralled practically all the tractor business in his territory through his aggressive methods and that I had come hundreds of miles to have him tell me about it. Jim smiled as he motioned me to sit down on the platform of a display tractor and said, "Oh, I don't know how I do it unless it's by hard work and keeping everlastingly at it all the time. I have my own way of doing things that seems to be getting results. For instance, I know my territory. Come into the office and take a look at my system." In his office Jim pulled down a huge loose leaf binder and opened it to a page which he explained as follows:

In Business to Make Money

"I am in business here to make money. I've got to make that money by selling power farming implements to farmers. The only way I can do it is to know absolutely all the machinery every farmer in my territory has on hand and the condition it is in so that I may have repair parts to answer his needs at all times. I must also have this information so I may know who are prospects now, and, what is even better still, who will be prospects a year or two years hence. So in dull periods I simply cover my territory, calling on every farmer and securing full data from him on every piece of machinery which he owns, together with information about his farm, whether he is a tenant or owner; a progressive farmer or not; and his likes and dislikes."

"But," I interrupted, "how do you get this information? Most farmers would want to kick you out of their yards when you come along asking for this information." "It all depends on how you ask for it," said Jim. "I go about it in this way: I say to the farmer that I am getting ready to order my machinery and repair parts for the next season, that if he has a breakdown I can take care of it immediately. In order to know what parts to order I must know what kind of machinery he has and the condition which it is in now. I am getting this information from all the farmers in my territory so that I can go back to my office and figure out the number of repair parts I will need for the various makes of implements in this territory. If he will give me this information now I can guarantee him service in the busy season when he needs it. When you approach a farmer from that standpoint," said Jim, "he will never refuse you for he knows that you are trying to give him the most valuable thing a farmer can get from his dealer, namely, Service which Serves.

"When I get back from my trip I enter all the data I have secured in this book as follows: I put down the name and address of the farmer, location of his farm, whether he is a tenant or owner, and then I list in parallel columns every piece of machinery he owns, its age and the condition it is in. A glance at the columns after each man's name tells me what the farmer is going to need this year, or next year, and from it I can pick the list of men to whom I want to sell and immediately begin mailing them literature on the implement I intend to sell them. Not alone that—most of these men have accounts with me and when I send out their statements at the first of each month I am always careful to enclose literature on some piece of machinery which I expect to sell them. In this way I am continually circularizing the live prospects in my territory not alone for immediate sales, but for sales which must come in the future. This system is all my own. I have worked it out myself carefully. It takes a lot of time, but that time can be used during the dull periods and I find it pays me wonderful returns on my work.

Educate Prospects to Power Farming

"I also look my territory over carefully and decide on the farmers to whom I wish to sell. I then go to work and educate those men to the power farming idea. How do I do it? By personal calls, by letters, by circulars, by signs, and—oh, yes, by suggestion.

"What do I mean by suggestion? Well, it's this way. I study my prospects and try to find out what their weak point is. Everybody has one. Maybe it's envy of his neighbor who has a tractor; maybe it's pride in being the best farmer in his territory; maybe it's love of good machinery; maybe it's taking orders from his wife—anyway, everybody has a weak point. When I find out what that point is, I build his education around it.

Believes in Signs

"You know," said Jim, "I am a great believer in signs. They are my silent salesmen and believe me they do the work. For instance, take this little tin sign of the Eaterup tractor. It's only about 12 x 18 inches and yet it has helped me to sell a pile of tractors. There's nothing on it except a picture of the tractor and the words 'Sold by J. W. Pokorny.' I don't try to club a farmer into a sale when he tells me he isn't quite ready to buy. I just get him feeling good natured and when I am ready to leave I good-naturedly remark that some day he is going to buy a tractor and I'm not going to let him forget that he is going to buy it of me. After I tell him this I pull one of these little signs out of my rig and stroll over to the well or the horse barn and tack it up, at the same time remarking that every time he has to water his horses and every time he goes into the barn to take them out, I want him to look at that little sign and remember that if he had a tractor he could save all the time that he now has to use caring for the horses. Lots of times I have put this little sign upon the gatepost leading out to the field and told the farmer to remember that every time he was following the team out to the field, he might be riding a tractor and doing his work many times quicker, thus assuring bigger crops put in and harvested on time. I have had many a farmer tell me when he finally bought a tractor that it was this little silent salesman that finally convinced him. The big thing in selling machinery to a farmer is to keep him thinking about it."

Service and Publicity

"You mentioned some time back," I remarked, "that you convinced the farmer that you could render service in repair parts for him when needed. What part does service play in your sales?" "The biggest part of all," Jim answered. "I believe in service that educates the farmer how to take care of his machinery, but I also believe in the 'Parts Service' which can be so prompt that it will keep the farmer's tractor or other machinery running all the time. I have worked this service idea so thoroughly that out of the scores of tractors operating in my territory, not one of them has ever been tied up for repairs more than six hours, and I sure use that fact in my sales. I let my territory know that I have parts at all times and that I've got the means of getting those parts to them quickly. I advertise it. I use it as a sales argument and I am convinced that it is one of the biggest sales assets in my business.

"Why, last spring," said Jim, as a broad smile spread over his face, "I went so far as to rent an aeroplane for two days during spring's work and advertise the fact that I would deliver repairs by aeroplane during those two days to any tractor owner in my territory who needed them. I guess that stirred them up. Every tractor owner in my territory who needed repairs held off until that day and then phoned me. They all wanted to have repairs delivered by aeroplane. My best record was to deliver 12 miles from here in just 18 minutes from the time I received the telephone call. That's the kind of service that keeps the farmer owners satisfied and makes them boost sales for you. Of course I can't afford to deliver repairs by aeroplane right along, but as a publicity stunt emphasizing our repair service, it repaid me a thousand times over and the whole territory is still talking about the service that Pokorny renders on his

Adapted from "N.Y. Evening Post."

HE DOESN'T GET THE ATTENTION HE USED TO.

Outstanding Features of Massey-Harris Cream Separators mean many sales for the live dealer

The Massey-Harris Cream Separator saves from ten to fifteen dollars a year per cow over the old methods of separation and furthermore it saves several dollars a year per cow over inferior separators.

Both the cream and skim-milk have clearly defined separate courses—there is no re-mixing after separation, which takes place quickly and surely.

Three outlets carry away the skim-milk quickly—there is no back flow.

A thick cream can be run withut clogging because the cream screw adjustment regulates the cream density without reducing the size of the cream outlet.

Only on the Massey-Harris Cream Separator are there six "V" shaped openings in the split wing extending from top to bottom—the milk is spread uniformly over every disc and before delivery to the discs is speeded up; thus the bowl runs freely and is not slowed down by having to speed up the milk.

Also in the Massey-Harris Separator we find die-cast split wing made of rust-proof metal; pressed steel discs with spacing calks welded into place; bowl separate from the spindle; positive lubrication with the double oiling system; a ball clutch that takes hold instantly; and a really reliable speed indicator.

The Massey-Harris Cream Separator is easy to sell, easy to fill, easy to turn, easy to clean.

MASSEY-HARRIS COMPANY, LIMITED

Established 1847

Head Office - TORONTO, ONT.

Selling the Farmer Clean Land

Every good farmer aims to keep his land free from noxious, crop-destroying weeds. Harrowing and cultivating stops growth of weeds, but doesn't kill them. As soon as cultivation is discontinued weeds flourish.

Sell the farmer what he needs to keep his fields clean—the **Weed Harvester.** It gathers the weeds up after cultivation has loosened them, rolls them up free of earth and ready to be burned. **Weed Harvesters** have been used successfully for twenty years in England and France, and for several years in some parts of Ontario. No other means has been discovered to deal so effectively with "quack" or "twitch" grass. It will take wild mustard out of growing grain when the grain is 3 or 4 inches out of ground. In addition it produces a fine seed bed, well-worked up and mellow. The **Weed Harvester** is a series of links of electrically-welded square bar iron held together with bars, and is 11 feet long and 8 feet wide, for four-horse or tractor hitch.

WEED HARVESTER

Ask us to prove to you why you should be able to sell every farmer a WEED HARVESTER whether his farm is "weedy" or not.

THE WEED HARVESTER MACHINE CO., Limited
BELLEVILLE, ONTARIO

For Sale

Lathes, Drills, Milling Machines, all kinds of Used and New Equipment

If you are thinking of buying equipment for your garage or machine shop, it will pay you to write for a copy of

CANADIAN MACHINERY
AND MANUFACTURING NEWS

In addition to a Buyers' Directory of leading manufacturers and dealers in New Machinery you will find lists of Used Equipment of almost every conceivable kind. And if you cannot find listed what you require, drop us a line and we will locate it for you. This service is free to readers of CANADIAN MOTOR, TRACTOR AND IMPLEMENT TRADE JOURNAL. Just fill out the form below.

CANADIAN MACHINERY AND MANUFACTURING NEWS
153 University Ave., Toronto, Ontario

Please send me a copy of CANADIAN MACHINERY AND MANUFACTURING NEWS. I (or we) want to purchase the following equipment .....

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Name.....

Street Address.....

City.....

(Canadian Machinery and Manufacturing News and Canadian Motor, Tractor and Implement Trade Journal are published by The MacLean Publishing Co., Limited, Toronto, Canada.)

BEARINGS

TIMKEN, HYATT, and NEW DEPARTURE BEARINGS

for all types Tractors, Trucks and Passenger cars. Delivery from stock. If you have not received our 1921 catalogue write us.

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KEYES SUPPLY CO., LIMITED

Wholesale Only

OTTAWA

WE GIVE

"Quality and Service"

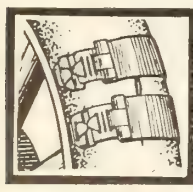
IN

TRACTOR and TRUCK STEEL CASTINGS

Joliette Castings & Forgings Limited

Head Office: Transportation Bldg., Montreal

Works: Joliette, Que.



"THEY WEAR LIKE IRON," BUT BETTER.

Broughton's Steel Freely Hinged Blowout Boots. Carried for emergency like an insurance policy. A stock of these on hand will pay you in good times or bad. Wide and flat; easy on tire; easy riding; they hold in the lump. Centre plate renewable. Good for rim cuts, too. Non-skid. Suitable for most trucks and all autos. Put up in cartons. New 1921 design for straightside tires. They're Repeaters. Order from us or see any jobber's catalogue. The ends of the tread plate give support, like the buttresses of a bridge.

At Your Jobber's or us

The Geo. H. Broughton Co.
126 Wellington St. West
Toronto, Ont.

Do you read Farmers' Magazine, THE

Canadian National Farm Weekly

If you are interested in farm life and conditions, write us for a sample copy.

FARMERS' MAGAZINE
143 University Avenue
TORONTO

Liberty Grain Blower

Fan mill and elevator combined, at half the cost of an elevator. Loads into box car, wagon or bin. One man and gasoline engine does the work of 3 men without shoveling or lifting.

Elevates, Airs, Cleans

scours and polishes wheat or oats, making it test higher and bringing a better price. Light, durable, easily moved. Particulars free.

LINK MFG. CO.
Dept. 710, Portage La Prairie, Man.

PUTTING PERSONALITY INTO TRACTOR SALES

Continued from page 32

tractors. It's got to the point now that the majority of my sales are made through the influence of satisfied owners. I wouldn't sacrifice the confidence that these men have in me for the world. They believe in me. They believe in the machinery I sell and in the service I render them. That's what makes life worth living after all."

God Bless Honest Jim

"I wonder if that has anything to do with that sign over there on the wall," I remarked pointing to a rough sign painted on the wall at the far end of the building, which read as follows: "God Bless Honest Jim." Jim blushed and looked confused as he replied, "Well, maybe it does. I don't mind telling you how that came there. A few years ago when I put this building up, folks in town were getting ready to hold a series of revival meetings. They had difficulty in getting a building, so I offered them the use of this building, as I wasn't quite ready to move in. They took possession for a couple of weeks and held some splendid meetings. At the close of the meetings the revivalist painted that sign up there and I have never taken the time to paint it out. I kind of thought that if they felt that way about it it might do me a little good to leave it up there and look at it once in a while. I rather think it has helped me to play the game fair."

As I shook hands with Jim and climbed into the rickety jitney to return to the city I thought to myself that Jim had hit the secret of his success in his explanation of that sign. He had taken his business seriously; he was a real power farming specialist. He knew his goods, he sold those goods to the farmer and rendered service, thus building confidence, which, after all, is the foundation of all permanent business. Because he was honest and sincere the farmer owners whom he served radiated that confidence out to their friends, who, in turn, came to trade with "Honest Jim" and boost his business. In his own way Jim had worked out a system based upon knowledge of goods and square dealing with his customers and friends which has made him the most successful dealer in that section of Nebraska.

SASKATCHEWAN AUTO DEALERS' CONVENTION

Continued from page 14

ments to the Hawkers' and Peddlers' Act, or by-laws, as the case may be, requiring that any person operating as a gas engine mechanic or repair man, except on his own machine, without having an established place of business, pay a license fee per annum of not less than $50.00.

Oil Companies Selling Gasoline at Wholesale Prices to Individuals

That our provincial office take up with the oil companies and inquire into the method in which they are selling gasoline at wholesale prices to individuals at the present time, and see if arrangements cannot be made to have it discontinued.

Numbers on Lien Notes

That the Provincial Executive request the Provincial Government to the act representing lien notes to allow the serial, engine and car number, and make of car to be specified therein when given for motor vehicles, and further provide that the office where such registration is made be required to forward full information to the other registration offices in the province.

Selling of Automobile Tires at Cut Prices

That this convention does not approve of the present method of supplying tires to dealers who persistently refuse to maintain the company's advertised list price.

Tire Discounts

WHEREAS, the present discounts allowed dealers by the various tire manufacturers are inadequate to allow the dealer to give the service which the public demand, and

WHEREAS the present discounts allowed do not cover the cost of the service now given nor cover the dealers' overhead in handling this line, and

WHEREAS, if the proper discount were allowed them the dealers could give the service which the public at large demand and the results would be very beneficial and highly desirable to the manufacturers;

BE IT THEREFORE RESOLVED, that we, the organized retail automobile and tire dealers of the Province of Saskatchewan in convention assembled at Regina this 27th day of January, 1921, strongly impress upon the various manufacturers of tires the necessity of immediate consideration of the present serious conditions surrounding the retail trade in tires, and submit that inasmuch as the present discounts allowed are inadequate, they be increased to 33 1-3 per cent. of the retail sales price.

Discounts on Autos and Parts

That this convention of retail automobile dealers desires to put itself on record and asks the support of the dealers in our sister provinces to make this movement Dominion-wide in order to bring concerted action of the dealers of the whole Dominion to insist upon discounts on the purchase of motor vehicles from the factory.

Interim Certificates

That we ask the Provincial Government through the provincial office to allow dealers to issue 48-hour interim license certificates, so as to enable purchasers to drive their cars home without breaking the law.

—

ONTARIO AUTOMOTIVE DEALERS MEET

Continued from page 14

single out any one branch, I wish to pay special mention of the splendid co-operation which we have received from the executive officers and members of the London and Middlesex branch and who have been most untiring in their efforts to expand the work of our provincial organization.

"To the president, Sam. Rowed, of London, I wish to convey my sincere appreciation of the very valuable service which he has rendered at all times, which I know have been made at a sacrifice to himself, both financially and from a business standpoint."

Henry Watters, treasurer of the Dominion Board of the R.M.A., spoke for a short time the first day on the reasons which prompted the retail merchants to organize.

E. E. Williams, representing the Dunlop Tire and Rubber Co., and others, stated that the desire of the tire manufacturers was to co-operate with the retailers.

Resolutions

Resolutions requesting the appointment of a Dominion official whose duty it would be to investigate reputed fakes in advertising and prosecute persons found guilty thereof, were adopted.

The dealers were of the opinion that certain advertising which appeared from time to time in the press was "untruthful and reflecting on the character of those who are endeavoring to do business in an honorable manner."

The Dominion Executive of the organization will ask the Provincial Government to increase the fees of those engaged in transient trade in order to make them "contribute like all others to the development of the municipalities."

Another resolution called for a conference with the manufacturers to talk

over the matter of distribution of their products. This resolution followed a lively discussion between various retail dealers and the representatives of manufacturing houses. The retailers charged that certain manufacturers were selling their products at wholesale prices on concerns which owned five or more automobiles or trucks.

Other resolutions dealt with opposition to any amendment to the Motor Vehicles Act to increase the speed limit; another called for an increase of local police forces in the cities and towns of Ontario to cope with the increasing thefts of motors, and another aims at a more uniform retail price for gasoline.

Other speakers were S. C. Cook, on "The Tire Situation"; H. B. Moore, on "Co-operation"; W. H. Hodgins, on "What Local Organizations Can Do"; W. H. McIntyre, on "Problems of Today"; T. H. Humble, on "Automobile Advertising"; L. H. Holman, on "Storage Batteries"; E. E. Williams, on "Tire Merchandising and Service"; James Buchanan, on "What Constitutes Service"; J. A. McLaren, on "Tire Adjustments"; A. A. Gorrie, on "Motor Trucks"; J. J. Duffus, vice-president, on "System"; T. W. Learie, on "Taxation"; R. H. Spurr, on "The Gasoline Situation"; A. J. Gilmore, on "Garage Service"; W. A. McLean, deputy minister of highways, on "Ontario's Highway Development"; M. Christian, on "Automotive Insurance."

Wednesday night a banquet was held in the convention hall.

The new officers elected were: President, J. J. Duffus, Peterboro; first vice-president, E. J. Pink, Ottawa; second vice-president, T. Copeland, Windsor; third vice-president, J. Macdonald, Stratford; treasurer, Frank McLaughlin, London; secretary, W. C. Miller, Toronto. The retiring president, Sam Rowed, and the secretary, W. C. Miller, were both recipients of suitable tokens of appreciation on behalf of the organization.

NEW LIGHTING PLANT

THE Penmac 1½ kilowatt lighting plant, made by the Petroleum Engine and Manufacturing Company, Insurance Exchange Building, Chicago, Illinois, is distinguished by the use of a Hvid engine.

The outstanding feature of all these engines is their simplicity and this is combined with a degree of economy equaled only by the Diesel engine. The kind of fuel used and the manner of its utilization are practically identical with those of the Diesel, except that the fuel is admitted to the cylinder by gravity instead of being forced in under extremely high pressure. The Penmac engine is without carburetor or other mixing device, and has absolutely no ignition apparatus of any kind. It will run on kerosene, fuel oil, or crude oil, provided it is sufficiently fluid to feed through the admission valve and is free from certain substances such as asphalt in excessive amounts, but not on gasoline. The fuel consumption is said to be about one-half pound per horsepower hour and is guaranteed not to exceed six-tenths of a pound.

In most respects the engine is like any ordinary four-cycle engine with the exception that it is built in every way to run with a compression of four hundred and fifty pounds per square inch. The bearings, shaft and flywheel are naturally heavier than usual and six piston rings are used instead of three. On the suction stroke air only is admitted through the intake valve and it is then compressed to a degree indicated, becoming very hot in the process. The heat of compression begins to vaporize and ignite a charge of oil in a tiny cup projecting into the combustion space. The pressure of this explosion blows the remainder of the fuel into the space above the piston where it completes its burning and delivers its power It will be noted that the fuel has no opportunity to come in contact with the cylinder walls until after it is ignited. For this reason it does not give trouble by diluting the lubricating oil and the oil economy of the engine is consequently high. While the oil consumption is exceedingly low, the oil used must be of the very best quality because of the high compression which must be held.

A fly-ball governor mounted in the flywheel controls the speed by regulating the amount of fuel which is permitted to flow into the fuel cup for each charge, and there is no throttling of the intake air. The bore of the engine is 3½ inches, the stroke 4½ inches, and the speed eleven hundred revolutions per minute. The engine is rated at three horsepower and will carry this load at the belt pulley in addition to a light load on the generator.

A feature of the control panel is the use of a clock for automatic stopping by means of which the engine may be set to run for any desired length of time, after which stopping will occur without further attention. Another feature is the provision of a field rheostat, which is simply a means of regulating the rate at which the battery is charged. Connection and disconnection of the battery to the generator is handled by an automatic cut-out so that the battery is properly protected under all conditions. There are, in addition, the usual fuses, starting and stopping, line, and battery switches, and ammeter.

DURANT MAKES MORE PLANS FOR NEW AUTOMOBILE CO.

W. C. DURANT, former president of General Motors Corporation, is proceeding steadily in the organization of his new company, Durant Motor Co., Inc., and with independently organized assembling plants. A building was purchased for about $2,000,000 by Mr. Durant at Long Island City for use in assembling motor cars for New England and Atlantic coast territory and for export trade. The New York subsidiary of the Durant Motor Co. is capitalized at $3,000,000. It is expected that approximately 25,000 cars a year will be shipped from the Long Island assembling plant. The former dominating figure in the automobile world is making energetic efforts to regain a dominating position.

MOTOR CO. PRESIDENTS CONFIDENT OF FUTURE

NEW YORK.—At the annual meeting of the Studebaker Corporation, held April 5, President Erskine issued a rather optimistic statement on the operations of the company and the outlook for the industry for the latter part of the year. Mr. Erskine states that the output of cars is increasing rapidly, and that sales for the second quarter of the year will exceed those of last year. By June the company expects to turn out 8,500 cars a month. He also pointed out the company's bank loans had been reduced by $2,500,000 during March. Pierre S. Dupont, president of the General Motors Corporation, in his report to stockholders, also takes a hopeful view of the motor industry, stating "that there is evidence that the year will show a substantial recovery and a reasonably satisfactory business, with a good foundation for the future prosperity."

AUTOMOBILE FACTORIES IN CANADA

STATISTICS compiled on the automobile industry in Canada show that there are 10 companies manufacturing cars in Canada; 351,000 cars manufactured since 1916; annual necessary replacement, 80,000; value of 1920 production of passenger cars, $84,500,000; dealers in Canada, 1920, 5,500; persons employed in automobile and allied industries, 80,000; persons involved, including families of workmen. 400,000; capital invested in dealers' companies, $43,000,000; capital invested in manufacturing companies, $110,000,000.

No motorist likes to discard a good engine

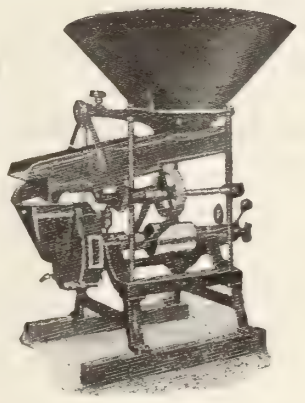
Even though they all want new models few car owners relish the idea of parting with a tried and true engine.

There is no necessity of losing the services of an engine that has shown its power and taking a chance on a new one. Our remodelling service gives every one of your patrons opportunity to have a new model and still keep the trusty old engine.

The old car can be transformed as your customer wishes—from touring to closed, from roadster to coupe, from closed to open—any way he wants. Send us the chassis, tell us what you want and expert *coach* builders will give you a job both you and your customer will be proud of.

Any make of car. Any type of body. It's a dandy proposition, write for it.

AUTO TOP & EQUIPMENT CO., Limited
270 Dundas Street West, Toronto
"EVERYTHING ABOVE THE CHASSIS"



If you could find the equal of "Vessot" Grinding Plates

You might find a Feed Grinder as good as the "Vessot." As yet no other manufacturer has been able to construct plates that approach the "Vessot" in grinding efficiency and wearing qualities.

Note the trade-mark "SV" cast in the plate. Nine different sizes from 6½ to 15 inch.

Get the "Vessot" Agency Plan from the nearest branch of the International Harvester Company. It will surely interest you.

Invented and Manufactured by
S. Vessot & Co.
JOLIETTE, QUE.
Sold Exclusively in Canada by
International Harvester Co. of Canada, Limited

Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John.

Grinder with Elevator and Bagger

With the Manufacturers

The Ruggles Motor Truck Co., London, Ont., is planning to erect another large addition to its plant.

Geo. White and Sons Co., Ltd., held their annual tractor school at their Brandon warehouse on March 7 to 12.

The Gove Motor Co., Tilbury, Ont., will start work early in April on the erection of a factory to manufacture automobiles and trucks.

P. F. Nichols, sales manager of the Apex Electric Mfg., Co., of Chicago, is making a business trip through Ontario, Quebec and the Eastern provinces.

The Service Motor Truck Co., Wabash, Ind., has completed plans for increasing its capital stock from $3,000,000 to $10,500,000, with a view to expansion.

C. E. Bell, who has been assistant manager at Regina for the Goold, Shapley and Muir Co., has been put in charge of that company's sales for Saskatchewan.

Tyrrell H. Ducombe, formerly of St. Thomas, Ont., has organized the Ducombe Overrunning Clutch Co., of Detroit, which will manufacture a coaster for automobiles.

The Owen Sound Wire Fence Co., of Owen Sound, announces the appointment of Captain Lloyd Lott as sales manager. Captain Lott was formerly connected with the Sarnia Fence Co.

F. X. Chauvin has been appointed manager of the Winnipeg branch of the Huber Manufacturing Co., of Marion, Ohio. Mr. Chauvin was formerly connected with the Sawyer-Massey Co., at Brandon.

The Lyman Tube and Supply Co., Montreal, have been appointed Canadian distributors for the "Hoffman" ball and roller bearings, manufactured by the Hoffman Mfg. Co., of Chelmsford, Essex, England.

The International Harvester Company, Chicago, announce that J. H. Hurst has been appointed to a position in the advertising department. Mr. Hurst was formerly associated with the Farm Implement News.

The Gray Motor Corporation, Detroit, recently incorporated with a capital of $4,000,000, has as its officers: President, F. L. Glingensmith; vice-president, F. F. Beall; treasurer, G. H. Kirchner; secretary, J. B. Moran.

The Cockshutt Plow Company, Brantford, Ont., had an exhibit at the Columbus Tractor Show. The exhibit was in charge of E. A. Mott, vice-president; W. S. MacFarlane, sales manager, and G. H. Wedlake, works manager.

The J. I. Case Threshing Machine Co. announce the appointment of E. W. Pocock as assistant manager to A. H. Alfsen at Toronto. Mr. Pocock has been connected with the J. I. Case Co. at Winnipeg for the past ten years.

C. W. Northcott who has been in charge of the Regina branch of the Goold, Shapley & Muir Co., Brantford, Ont., has been appointed sales manager by the same company and has already taken up his duties at the head office at Brantford.

The Dodge Motor Co. announced recently the appointment of L. H. Stanton as field representative, his territory to extend from Fort William to the coast. Mr. Stanton has been for the past five years with the Cadillac Motor Sales Co., Winnipeg.

Fiat, of 501 Fifth Ave., New York, manufacturers of the Fiat tractor, announce that their factories in Turin, Italy, are speeding up production to take care of the new fields opened in Canada and the United States for Fiat tractors, trucks and automobiles.

The U. S. Tractor and Machinery Co., Menasha, Wis., manufacturers of the U.S. Tractor, recently opened an export office at the Grand Central Palace, New York. All export business of the company will be handled through this firm, which is in charge of J. E. Simonds.

The Perfection Mfg. Co., of Montreal, manufacturers of the Perfection milker, announce the appointment of E. A. Lockyer as manager of their Toronto office. Previous to taking this position Mr. Lockyer was with H. F. Bailey & Son, of Galt, Ont., for two years as sales manager.

THE Standley Skid Chain Co. have made arrangements with the Mattauch & Strong Co., of Des Moines, Iowa, to manufacture and market the Strong transmission band adjuster for Ford cars. This will be sold in the future as the "Standley transmission band adjuster."

The Shinn Flat Mfg. Co., of Guelph, Ont., held a dealer's convention on March 17-18 when upwards of fifty dealers from Western Ontario were present. This convention will be followed by others for dealers in Eastern Ontario, Quebec and the Maritime provinces respectively.

The Samson Tractor Co., of Canada, recently held a convention for their Ontario dealers at Oshawa. A number of executives from the American plant at Janesville, Wis., were present, as were also R. S. McLaughlin, president, G. W. McLaughlin, vice-president, and C. E. McTavish, sales manager.

The Ford Motor Company, of Canada, recently announced the resignation of B. Ross McKenzie, who for several years has been purchasing agent for the company. It is also announced that W. E. Fisher, who has been with the company for some time, has been appointed to succeed Mr. McKenzie.

The Moline Plow Co., Moline, Ill., recently announced the promotion of H. B. Dinneen to take charge of the production of all Moline implements. Mr. Dinneen has been for the past year general trade manager of the Moline Plow Co. and previous to that he served with the John Deere Plow Co., as manager.

The Timken Roller Bearing Co. announces the appointment of L. M. Klinedinst as assistant sales manager. Mr. Klinedinst has been connected with the Timken Roller Bearing Co. for the past sixteen years. Just prior to this appointment he was manager of the tractor and farm implement division of the sales department.

C. M. Eason, for some time vice-president of the Hyatt Roller Bearing Co. and general manager of the tractor division of that company, has been transferred to the Samson tractor division of the General Motors Corporation. Both the Hyatt Roller Bearing Co. and the Samson Tractor Co. are subsidiary divisions of General Motors Corporation.

W. E. FINNEGAN has resigned from the position of general sales manager of the Gray-Dort Motors, Limited, Chatham, and has been appointed general director of sales of the Ruggles Motor Truck Company, Limited, London, Ont. Mr. Finnegan's record as a sales executive and organizer is well known and his host of friends in the automobile and motor truck business from coast to coast wish him every success in his new position.

H. M. CARROLL WITH REMY

H. M. CARROLL, advertising manager of the tractor and implement bearings division of the Hyatt Roller Bearing Co., has resigned to accept a like position with the Remy Electric Co., Anderson, Ind. In his new position Mr. Carroll will still be in touch with

H. M. CARROLL
Remy Electric Co., Anderson, Ind.

the farm equipment industry, for the Remy Company recently placed on the market a new high tension magneto for tractors and trucks.

BEAVER MOTOR TRUCK CORPORATION ADDS TO BOARD OF DIRECTORS

H. R. WILLIAMS, president and general manager of the Beaver Motor Truck Company, announces the names of Guy H. Long, president of the Long Lumber Company, also president of the Consumers Lumber Company and chairman of the Hydro Commission, and Arthur E. Martin, prominent in financial circles and treasurer of the Hamilton Bridge Works Company, as new elected members of the Board of Directors.

At a general meeting held at the office of the company, on March 26th, the auditors' statement was presented, which showed the assets of the company to be more than three times the amount of the liabilities. In addition, the building, plant and machinery were practically without encumbrances of any kind. A plan was presented to provide for additional capital, which met with the hearty and unanimous approval of all present.

The management pointed out, that in order to meet the growing demands of the business and to further assist in placing on the market a small light delivery model which has been perfected, $50,000.00 additional capital would be required, all of which was subscribed.

H. E. BRASIER PROMOTED

WILLYS-OVERLAND, Limited, are announcing an appointment of special interest in automobile circles, in the selection of H. E. Brasier as manager of the Toronto branch, succeeding H. D. Scully, who has resigned to take up other important work. Mr. Brasier has been service manager for Canada for some years, and is widely known throughout the whole Canadian Overland organization. He will have a field for which he is particularly adapted owing to his large acquaintance in the city. He was connected with the bicycle industry first, and later joined the Russell Motor Car Co., where he was for several years accountant at the Toronto branch. When this company was taken over by the Willys-Overland, Ltd., his good work led to his appointment as service manager at the head office.

LONDON MOTORS, LIMITED

THE London Motors, Limited, makers of the "London Six" car, have purchased the George White property at the corner of King and Ridout streets, London, Ont. The new firm expects to be ready for production early in April. They have also let contracts calling for a new factory to be built on Hale street, near the Grand Trunk Railway. W. R. Stornsell is president and general manager; Howard W. Saper is first vice-president and secretary; G. D. Pinner and Samuel Willis are second and third vice-presidents respectively. The other directors are Thomas H. Griffith and Harry Bartliff.

APPOINTED SERVICE MANAGER

THE Willys-Overland, Limited, Toronto, announce the appointment of F. Madget as supervisor of service. Mr. Madget was with the Russell Motor Car Co. for ten years preceding the merging of that company with the Willis-Overland, Ltd. He has been identified with the latter company continuously since that time.

GOODISON CO. HOLD TRACTOR SCHOOL

THE John Goodison Thresher Co. held a successful tractor school for their tractor users at Sarnia, February 28 to March 5. Two expert instructors from the tractor factory conducted the lectures, which were well attended. The practical work of tearing down and building up a tractor was interspersed with a series of lectures each day. The students came from all parts of Ontario.

John Goodison Thresher Co. tractor users attend tractor school.

TRACTOR DEMONSTRATION AT BAGDAD

BAGDAD held its first agricultural tractor competition for fifteen consecutive days during the month of January last, with Austin, Fiat, Fordson and Saunderson machines as the principal performers. The trials were followed with great interest by the Arab farmers, who were very quickly converted to the advantages of mechanical traction and who placed orders for these machines without waiting for the final and technical results of the competition. The sight of these modern agricultural machines being driven and cared for by the natives was picturesque in the extreme.

The competition was carried through very successfully, all the machines doing good work. The trials were attended by the high commissioner.

FARMER NEEDS MOTOR TRUCK

THE farmer has greater need of the motor truck to-day than ever before. At least the need is felt more because of the value of time and the pressure of commercial competition. The prices obtained for many classes of products by the farmer depend to a large extent upon his ability to place them on the market in good condition at the right time. The ordinary methods of marketing farm products do not take promptness into consideration. Great quantities of food are wasted because farmers can not profitably get their products to market.

Oftentimes strikes or a congested railway system will cause disastrous losses to the farmer and to the consuming public. This is the point where the farmer's motor truck proves a real investment, for he overcomes the loss by carrying his cattle or his farm produce through to destination where a ready market awaits them.

Good roads and the truck practically put all farms within reach of the best markets.

The fruit grower who has a haul to the loading station can not afford to be without a truck. The truck has become a part of the equipment of many large and progressive orchards; it is as necessary as the horse and wagon used to be, and, as a matter of fact, can in most instances take the place of the horse and wagon. It does much of the carrying about the place, bringing the fruit from the fields to the packing sheds and transporting the baskets back again to the fields. It gives a rapid means of taking labor from one part of the place to the other for bringing it out from the centres of population to the orchards and taking it back again at night or at the end of the week.—Family Herald.

CHEVROLET OFFERS REFUND ON SALES

NEW YORK, March 21.—As a special inducement to prospective buyers to come into the market at once, the Chevrolet Motor Co. has announced a refund of from $70 to $100 on its several models, providing sales between Jan. 1 and July 31 equal the 50,000 production schedule which the company has outlined for this period.

List prices of models and the amount of reduction under the proposed plan are:

Roadster and touring, $795; refund, $70; light delivery wagon, $820, refund, $70; chassis, $770, refund, $70; coupe, $1,325, refund $100; sedan, $1,375, refund, $100.

According to the announcement the refund represents savings in material prices under present readjusted conditions, which savings can be made provided Chevrolet factories continue to operate on the estimated average quantity production basis. It is in keeping with the Chevrolet policy, it declares, to make the price of its product as low as quality manufacture on a large scale will permit.

Fifty thousand cars is the minimum, the company says, which its engineers estimate will secure substantial savings in cost in manufacture. Purchasers under the plan will receive a certificate from dealers which will be redeemed as indicated on its face. Production results will be announced about August 10.—Motor World.

INCREASING CAPITAL

THE P. T. Legare Co., Ltd., Montreal, has increased its capitalization and is making an issue of $1,200,000 bonds for extending its selling operations in agricultural implements and household goods.

APPOINTED GENERAL MANAGER

THE General Top Company, Ltd., Toronto, makers of Art-Craft tops, announced recently the appointment of W. A. Swayze as general manager of the company. Mr. Swayze was, until recently, manager of the top and trimming department of Cutten and Foster, Limited, and is a well known auto top expert.

FORD'S FINANCES

LANSING, Mich., March 28.—Total assets of $384,554,941.68 on December 31, 1920, are shown in the annual report of the Ford Motor Company filed with the secretary of state. Cash on hand, including deposits in banks, is given as $13,557,244.51, and the value of credits owing to the company is placed at $54,438,633.50.

Liabilities of the company on unsecured indebtedness are shown as $143,025,300.61.

The report shows that 95,321 shares of the company's stock are owned by Henry Ford, 71,911 by Edsel B. Ford, and 5,413 by Mrs. Henry Ford.

JOHN DEERE CATALOGUE

THE John Deere Manufacturing Co., of Welland, have just issued a handsome catalogue illustrating their complete line of farm implements for 1921. Besides showing all the implements in the John Deere line, the catalogue adds much valuable information about the use of farm implements. Dealers can obtain a copy by writing to their main office at Welland.

Simple, Durable, Economical, Reliable

BARRETT SELF STARTER AND PRIMER

GUARANTEED FOR FIVE YEARS — For all Fords — $40

RELEASES automatically in case of backfire and does no harm to the operator, engine or starter.
No cables, no chains, no pulleys and no springs to wind.
75% increase of leverage on crankshaft.
Easy to install, no holes to drill.
It STARTS COLD ENGINE instantaneously even in zero weather.
Ready for starting any time and as often as wanted because it does not depend on the running of the engine for power.
All essential parts made of the very best steel.
ABSOLUTELY NOISELESS. Not a luxury but a necessity.
Endorsed by prominent automobile engineers and mechanical Ford experts as mechanically perfect in every respect and the best that has come under their observation.
The Special Primer which is supplied free with every Starter, vaporizes the gasoline direct into the cylinders, assuring a quick, positive start. The Primer is also operated from the seat.

From agents or direct from

IMPERIAL AGENCIES, 81 Victoria St., TORONTO

GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

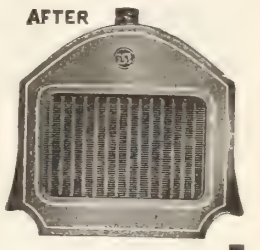
Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

Making 'em like new again

—and we've had more experience at it than any other firm in the Dominion. We take all the trouble, waste time and possibility of loss off your hands, give you an A1 job and leave a margin of profit you'll be tickled to receive. Send us repair jobs on Fenders, Radiators, Lamps, etc. We'll please you and your customer.

BEFORE

AFTER



WHITE & THOMAS, 210 SIMCOE STREET TORONTO

Keep the profit but get rid of the trouble

An Auto and Truck Spring Service you'll appreciate

No matter what the problem you're up against—repairing, rebuilding, or making to order—as long as it's a spring problem we can be of profit to you.

Our specialists will relieve you of the annoyance and work and leave you a profit that will please you. Try us. We can fit any car, repair any spring, or build any special spring to order.

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Automobile and Truck Spring Service Station
4 to 6 Wood St., TORONTO

CANADIAN Motor, Tractor and Implement Trade Journal BUYERS' DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

AUTO ACCESSORIES
Auto Top & Equipment Co., 270 Dundas St. W., Toronto.
Beaver Pattern Mfg. Co., 337 King St. W., Toronto.
Brown Engineering Corp., Limited, Toronto, Ont.
Burd High Compression Ring Co., Rockford, Ill.
G. H. Broughton, Toronto.
Canadian Auto Accessories, Toronto.
Canadian National Carbon Co., Toronto and Winnipeg.
Cozens & Maynard, 4-6 Wood St., Toronto.
Hart Battery Co. Ltd., Montreal.
Hercules Bumpers, Ltd., 4 Spadina Ave., Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
Geo. C. Kaitting, Galt, Ont.
Lamontagne, Ltd., Montreal.
Pasznicki Bros., 21 Richmond St. W., Toronto.
Republic Flow Meters, Ltd., Toronto.
Shaw Auto Salvage Parts Supply Co., Toronto.
The Canadian Raybestos Co., Peterborough, Ont.
G. Trussler, Orillia, Ont.
White & Thomas, Toronto, Ont.

AUTOMOBILE LENS
Garage Supply Co., 23 Richmond St., Toronto.
Keyes Supply Co., Ltd., Ottawa, Ont.
McKee Glass Co., Jeanette, Pa.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE BOOKS

AUTOMOBILE TIRES
Ames, Holden, MacCready, Montreal.

BARN EQUIPMENT

BEAN MACHINERY
John Deere Mfg. Co., Welland, Ont

BEET MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

BEARINGS

BINDERS
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING
The Canadian Raybestos Co., Peterborough, Ont.

BATTERIES
Canadian National Carbon Co., Toronto & Winnipeg.
Hart Battery Co. Ltd., Montreal.

BUYING GUIDE
Canadian Machy. & Mfing. News, Toronto.

CARRIAGES

CREAM SEPARATORS
De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS
Joliette Castings & Forgings Ltd., Montreal and Joliette, Que.

CORN HARVESTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

CORN MACHINERY
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey-Harris Co., Ltd., Toronto.

CULTIVATORS
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey-Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
Weed Harvester Co., Belleville, Ont.

CUTTERS
Butterfield & Co., Inc., Rock Island, Q.

DAIRY SUPPLIES
DeLaval Dairy Supply Co., Peterboro.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

DIES
Butterfield & Co., Inc., Rock Island, Q.

DISCS

DITCHING MACHINES

DRILLS, TWIST
Butterfield & Co., Inc., Rock Island, Q.

DRILLS, GRAIN
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

ELECTRICAL EQUIPMENT

ENGINES
Gilson Mfg. Co., Ltd., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

ENSILAGE CUTTERS
Gilson Mfg. Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

FEEDERS
John Deere Mfg. Co., Welland, Ont.

FARM MACHINERY
Cockshutt Plow Co., Brantford.
John Deere Mfg. Co., Welland, Ont.
Gilson Engine Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Link Mfg. Co., Portage La Prairie, Man.
R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.
Weed Harvester Co., Belleville, Ont.

FEED CUTTERS
Gilson Engine Co., Guelph, Ont.

FENCE POSTS
Burlington Products, Ltd., Hamilton.

FENCING
Burlington Products Ltd., Hamilton.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

GRINDERS
Gilson Engine Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
S. Vessot & Co., Joliette, P.Q.

HARROWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

HAY LOADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

HAY RAKES
John Deere Mfg. Co., Welland, Ont.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.

HAY CARRIERS

HAY PRESSES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HULLERS (Clover)

LENS
Garage Supply Co., 23 Richmond St., Toronto.
Keyes Supply Co., Ltd., Ottawa, Ont.
McKee Glass Co., Jeanette, Pt.

LIGHTING SYSTEMS
R. A. Lister Co. (Canada), Ltd., Toronto
Gilson Engine Co., Guelph, Ont.

LIME AND FERTILIZER SOWERS
John Deere Mfg. Co., Welland, Ont.

LUBRICANTS
Canadian Oil Co., Toronto.
Spedolene Refining & Mfg. Co., Montreal.

MACHINE TOOLS
Windsor Machine and Tool Works, Windsor.

MANURE CARRIERS

MANURE SPREADERS
Gilson Engine Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

MARINE FITTINGS

MOWERS
Cockshutt Plow Co., Brantford, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MILKING MACHINES
DeLaval Dairy Supply Co., Peterboro.
R. A. Lister Co. (Canada), Ltd., Toronto

MILLING CUTTERS
Butterfield & Co., Inc., Rock Island, Q

OILS
Canadian Oil Co., Toronto.

PISTON RINGS
Brown Engineering Corporation, Ltd., Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Lamontagne Ltd., Montreal, Que.

PLOWS
Cockshutt Plow Co., Brantford.
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER AND LIGHT EQUIPMENT
R. A. Lister Co. of Canada, Ltd., Toronto.

POWER MACHINERY
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Gilson Engine Co., Guelph, Ont.

POWER SWITCHBOARDS

POTATO MACHINERY
John Deere Mfg. Co., Welland, Ont.

PULVERIZERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

PULPERS

RAKES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAPERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAMERS
Butterfield & Co., Inc., Rock Island, Q.

ROLLERS

ROLLER BEARINGS

SCUFFLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

SEEDERS

SCALES

SCREW PLATES
Butterfield & Co., Inc., Rock Island, Q.

STABLE EQUIPMENT

SILOS
Gilson Mfg. Co., Guelph, Ont.

SLEIGHS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SILO FILLERS
Gilson Mfg. Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SOCKET WRENCHES

SEPARATORS (CREAM)
De Laval Co., Ltd., Peterborough, Ont.
R. A. Lister Co. (of Canada), Ltd., Toronto, Ont.

SPREADERS, MANURE
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can Ltd., Hamilton, Ont.
Gilson Mfg. Co., Guelph, Ont.

SPARK PLUGS

SPRINGS
Cozens & Maynard, Toronto.

STARTERS
Imperial Agencies, 81 Victoria St., Toronto.

STAMPINGS
Geo. C. Baddon & Partners, 45 Chancery Lane, London, Eng.

TELEPHONE APPARATUS

TRACTORS
Cleveland Tractor Co., Ltd., Montreal.
Gilson Mfg. Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
J. I. Case Threshing Machine Co., Inc., Racine, Wis.

TRACTOR PLOWS
Cockshutt Plow Co., Ltd., Brantford.
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

TOOLS
Windsor Machine and Tool Works, Windsor.

THRESHERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
J. I. Case Threshing Machine Co., Inc., Racine, Wis.
R. A. Lister Co. (Canada), Ltd., Toronto
Gilson Mfg. Co., Guelph, Ont.

THREAD CUTTING TAPS
Butterfield & Co., Inc., Rock Island, Q.

TIRES
Ames, Holden, MacCready, Montreal.

TWIST DRILLS
Butterfield & Co., Inc., Rock Island, Q.

TRUCKS
Beaver Motor Truck Co., Ltd., Hamilton.
Eastern Canada Motor Truck Co., Ltd., Hull, P.Q.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Ruggles Motor Truck Co. Ltd., London, Ont.

VULCANIZING
Beaver Pattern Mfg. Co., Toronto.

WAGONS
International Harvester Co., of Can. Ltd., Hamilton, Ont.

WATER BOWLS

WEEDERS
Weed Harvester Co., Belleville, Ont.

WIRES AND CABLES

BUTTERFIELD Quality

"The Tools You Buy Again"

DURING the good days now opening before you, make all the profit you can to offset the slow business of past months.

Btuterfield Quality can play a big part in making these brighter days profitable to you.

Tools that work with speed, that are accurate, that wear "a little longer," tools that have "Quality" will make a little more profit on each job and add considerable to your profits every day.

Such tools are good for business. Every job is a good, honest job—no complaints from old customers, more new business.

Butterfield Quality is the result of a habit we have in the Butterfield shops of putting our best efforts into every operation. Butterfield Quality is present in every tool that bears the Butterfield mark.

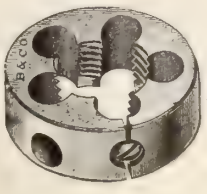
BUTTERFIELD & COMPANY *Division*

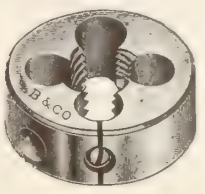
Union Twist Drill Co.

ROCK ISLAND - - QUEBEC

Toronto Office: 220 King Street West

Montreal Office: 131 St. Paul Street West





Sell the line already half sold

LISTER
FARM MACHINES
are what your customers want

The farmer that has been reading the farm magazines and the newspapers all winter knows about the

Lister Milker
The Lister Engine
The Melotte Cream Separator

He knows their reputation built up in twenty-five years of experience in Canada. Dealers won't have any trouble in completing the circle which clinches sales by **showing** Lister Machines, **talking** Lister Machines, **pushing** Lister Machines.

And **now** is the time to make sales.

Write for our literature and agency terms.

R. A. Lister & Co. (Canada) Limited
Stewart Street, near King and Bathurst, Toronto
or at Wall St. and Portage Ave., Winnipeg

6" GAP—£76 Nett.—(Nett weight, with Stand, 437 lbs. Will cut any Sheet Metal up to 7 Gauge or 3/16".)
12" GAP—£80 Nett.—(Nett weight, with Stand, 494 lbs. Will cut any Sheet Metal up to 10 Gauge or 1/8".)

F.O.B. all United Kingdom ports. CASH WITH ORDER.
Immediate delivery guaranteed

WILSON'S
Patent "Nibbling" Machine
For the Rapid Cutting of Metals

In use in the workshops of leading Railway Companies, etc.

OLD WAY:—Takes 2½ hours

NEW WAY:—(WILSON'S PATENT "NIBBLER") Takes 5 minutes

Wilson's Nibbler will quickly cut or perforate to any design all kinds of Sheet Metal.
The traverse of cut is in any direction following closely the outline of a template or graph without leaving the edge compressed.
It is an indispensable and economical unit for the making of Cast Steel Gauges.
It will cut any sheet metal at an **average speed of 18 inches per minute.**
It produces like a press at nearly its speed.
The job needs **no filing after leaving the machine.**
It takes very little room and requires under ½ horse power.

Sole Agents for Canada:
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Consulting Agricultural Engineers, General Engineers, Agricultural Machinery Specialists.
Telegrams: "Agritecnic, Holb, London." Telephone: Museum, 2018. Code: A.B.C. 5th Edition.

Dairy *and* Household Supplies

THE WASHERETE

THIS is a portable miniature washing machine which solves the problem of the small washing in a modern, labor-saving way. It is an entirely new product made by the Vu Mfg. Co., 840 University avenue, Rochester, N.Y., and weighs only six pounds. The ease with which it may be carried from the kitchen sink to the tub is clearly shown in the accompanying illustration. The wooden extensions serve to support the machine by suspending it over the kitchen sink or bath tub. The hose may be attached to any faucet, the clothes placed in the cylinder, warm water and soap chips added, and all is ready. The running water operates a water ratchet, causing the cylinder to oscillate, thus thoroughly washing the clothes.

The Washerete

"WHIRLPOOL" WASHING MACHINE

A NEW water power washing machine called the "Whirlpool" has been put on the market by Dowswell, Lees & Co., Ltd., Hamilton, Ont. This machine has been designed to meet the demand for a water power machine with a perforated rubbing board. Many people prefer this principle of washing and after successful experimenting the Dowswell Co. have evolved the "Whirlpool." The perforated rubbing board is operated to and fro with a squeezing, rubbing motion, which is stated to force the hot suds through the clothes without injuring the finest fabrics. The motor is similar to the one used in the "Ideal," and there are no delicate parts to get out of order. All parts coming in contact with water are made of brass. The motor is tested before leaving the factory and runs on low pressure from a regular 1-2-inch house service pipe having a flow of 3 1-2 gallons or more per minute. The tub is made of Louisiana cypress and is corrugated and specially waterproofed inside and wringer board is permanently attached.

FARM LIGHT NOT A LUXURY, BUT A NECESSITY

IN the course of a public address recently, J. R. Howard, president of the American Farm Bureau, spoke in part as follows:

"The farm home to-day is the heart of this country, and we should endeavor by every reasonable means to make those farm homes better. There should be in every farm home of this country the same comfort that there is in the city home.

"I am going to tell you a little personal experience. Four years ago, when the war was on, we were like everyone else—hard pressed for help. During the winter an electric light plant man came out and wanted to sell us a lighting plant, and we told him we could not buy for we would have to borrow the money.

"When spring came we were putting in the crop, and Mrs. Howard said to me one day, 'I am at the end of my ability to do this work. You will have to rent out some of the ground. I can't cook and wash and keep house for the farm help and all of these hired hands.' We could not get any help in the house. We could not get the washing done except we took it twenty miles and went twenty miles after it, which was an impossibility. And we reverted to the talk of that light plant. She said, 'If I had some way to get the ironing done and did not have to take care of these old lamps, and if I had a vacuum cleaner and a fan to take some of the heat out of the kitchen, I think I could get along.' I replied, 'You know why I did not buy that plant,' and she said, 'I know, and we would have to borrow the money, but I believe if that fellow could put in a plant right away I would try to borrow the money.'

"The next day I was out plowing with a tractor, and a fellow jumped across the fence. I don't know how he ever knew what we talked about at home, but it was the electric light plant man. I asked him if he could put it in right away. 'Yes, I can put it in next week.' So I told him to write out the order right away and he did, and we put it in.

"Do you know how I paid for that plant? I borrowed the money for 90 days at 7 per cent. and I knew I could not pay it. I renewed that note four times before I paid any of it, but do you know what that plant did for that country home of ours? It saved the day for us. It made housework easier. The housewife could go ahead and enjoy as necessities those things which her sister in the city had as luxuries. It increased our production on that farm.

"When at the beginning of this school year we took our family to the city in order that I could be at home occasionally while I was doing this farm bureau work, we did it with a good deal of fear and trembling for fear our boys would be obsessed with the lights of the city, but the boys were too wise to be fooled. That electric light plant, and other things comparable to it, had made the old farm life so enjoyable to our family that though now in the city, the boys do not talk about anything but going back to the farm as soon as school is out in June."

MILKING MACHINE ECONOMY

AN American farm paper, the Farm Journal, says that a milking machine will pay the farmer who has only four cows. The proof of this statement is given in tables of costs, showing a saving of $28.80 in a year in favor of the machine. While this is not large, it is, as the Farm Journal points out, a good rate of interest on the investment in the machine.

De Laval

The De Laval Milker occupies the same position among milkers that the De Laval Separator does among separators — head and shoulders above all.

The value of the De Laval Separator Agency Contract is appreciated—not alone because it enables the dealer to secure the lion's share of the separator business, but because the De Laval is a leader among leaders, and, through the friendship which it creates, pulls other business to the store.

Think of adding another leader to your line as good as the De Laval Separator, the sales possibilities of which have not been scratched, and the need of which among dairymen is as great as the need for De Laval Separators; backed by the same aggressive sales, advertising and service which have made De Laval famous.

If you have not already done so, inquire about the De Laval Separator and Milker Contracts.

THE DE LAVAL COMPANY, Ltd.

MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

Sooner or later you will sell the

De Laval

Cream Separator or Milker

$2,300

RUGGLES

1-Ton

RAPID DELIVERY TRUCK

A
quick
reliable
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transportation
unit
Made in Canada
for
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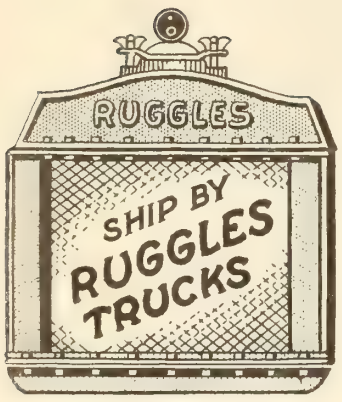
users
everywhere



MADE IN CANADA

Equipped with standard express body, canopy top, pneumatic cord tires, electric lights, electric starter and horn, full length running boards and rear mud guards.

$2,300, F.O.B. London

STANDARD MODELS

RUGGLES 1½ ton Chassis.
Seat and Solid Tires, $2,845

RUGGLES 2½ ton Chassis.
Seat and Solid Tires, $3,695

RUGGLES 3½ ton Chassis.
Seat and Solid Tires. $4,875

F.O.B. London

RUGGLES TRUCKS

Address all Correspondence to Department 6

RUGGLES MOTOR TRUCK CO., LIMITED, LONDON, CANADA

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

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VOL. III, No. 5 TORONTO, MAY, 1921 Subscription Price $2.00 Per Year

The Piston Ring that fits snugly under all conditions

The ExcellencE Two-Piece Piston Ring is not a mere "fairweather" servant. It is built to do its work effectively when conditions are dead set against it. Worn pistons and cylinders do not prevent the ExcellencE from fitting snug and close and shutting off the avenues of escape for gas and compression.

"The Peak of Perfection"

You see, the ExcellencE Ring can expand both ways —and does—automatically taking up any "slack" and constantly maintaining close touch with the cylinder walls.

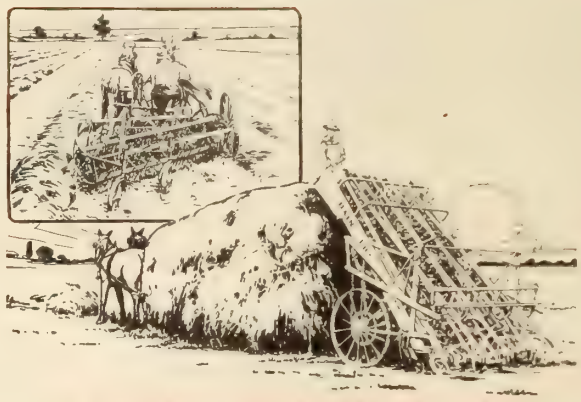
ExcellencE Rings are easy to sell your customer and eminently satisfactory when installed.

"In comparison to value the prices of EXCELLENCE Piston Rings are lowest"

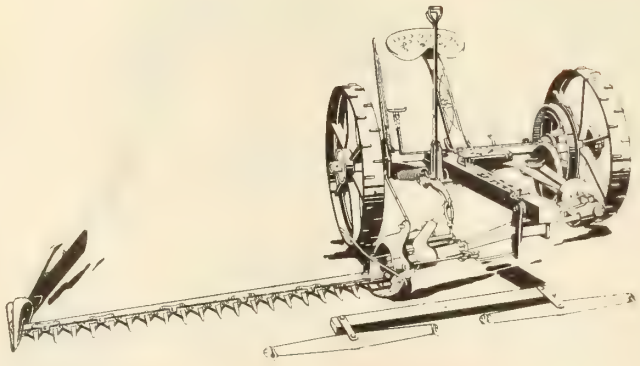
EXCELLENCE 2-PIECE PISTON RING

LAMONTAGNE LIMITED
Wholesale Dealers in Automotive Equipment
QUEBEC MONTREAL WINNIPEG

Over 30 Years' Experience in Building Dain Hay Tools



John Deere-Dain Hay Loader
and
Dain System Left-Hand Side Delivery Rake



John Deere-Dain Mower

John Deere Sulky Rake

John Deere dealers everywhere have confidence in DAIN HAY TOOLS. They know that in supplying their customers with DAIN HAY TOOLS they are selling Quality—plus satisfaction, and are adding prestige to their business.

DAIN HAY TOOLS have more selling features and advantages than any other line of hay tools.

Dealers will find it highly profitable to push the sale of DAIN HAY TOOLS vigorously. John Deere Advertising, featuring DAIN HAY TOOLS, is reaching practically every farmer in Ontario, and will create prospects and assist you in making easy sales.

We solicit inquiries from live dealers in open territory.

The John Deere Manufacturing Co., Limited

WELLAND ONTARIO

IMPERIAL
Polarine

Kerosene Tractor Oil

A dark colored heavy-bodied oil suitable for kerosene and gasoline tractor engines. It protects rubbing surfaces from wear—reduces friction—maintains full compression.

Imperial Polarine Kerosene Tractor Oil Extra Heavy

A dark red-colored rich oil of extra heavy body—specially recommended for kerosene and gasolene tractor engines requiring an unusually heavy oil.

Imperial Polarine "A"

A dark red-colored oil of extra heavy body for air-cooled or water-cooled gasoline or kerosene-burning engines. Especially suitable for kerosene tractors and for motor cycles.

The Imperial Chart of Recommendations for **all types** of tractors should be prominently displayed wherever Imperial Polarine is sold. Write to 56 Church Street, Toronto, for Charts.

Selling Tractors and Satisfaction

Imperial Polarine Increases Owners' Satisfaction and Your Sales

You clinch every tractor sale you make when you supply the owner with the correct grade of Imperial Polarine. It insures complete satisfaction with his machine and builds goodwill, which brings old customers back and creates new ones.

Sell the new tractor owner *correct lubrication* with Imperial Polarine at the same time you take his order for a tractor. Get out into the field after old customers, if necessary, and point out the advantage of using Imperial Polarine as recommended by our charts.

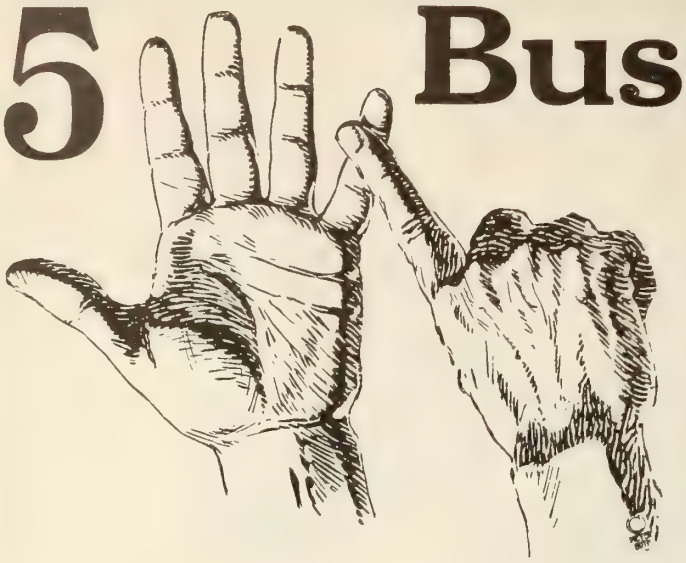
Go after the oil business in your territory with Imperial Polarine and you will soon find that you're getting most of the tractor business, too. Continuous advertising helps you sell Imperial Polarine, and its uniform high quality and dependable service will keep users "sold" on it.

Imperial Polarine is a big profit-maker for dealers. Ask the Imperial Oil salesman about our attractive dealer agreement and its advantages.

IMPERIAL OIL LIMITED

Power—Heat—Light—Lubrication

Branches in All Cities



5 Business Reasons

why you should have a

Universal Cylinder Reboring Tool

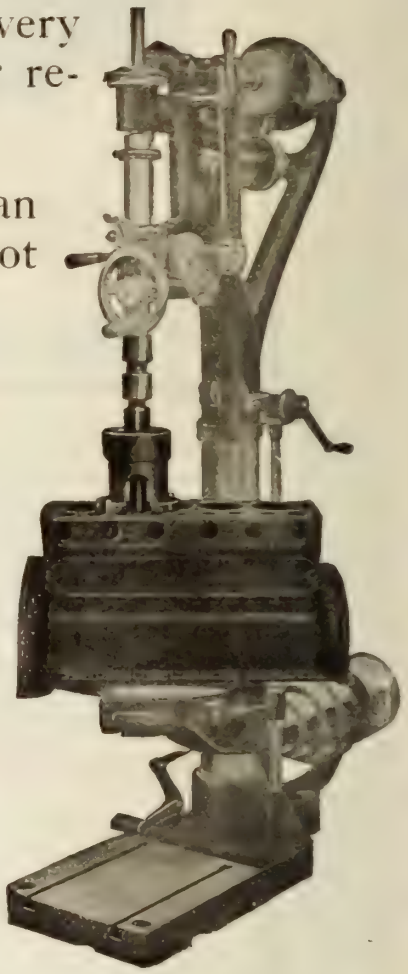
1. It puts more money in your pocket—you can do the very highest class of cylinder reboring right in your own shop—you keep all the profit.

2. It saves your customers' time—no annoying delays—you can state definitely when job will be finished because you are not dependent on anyone else.

3. You can guarantee as good a job as any factory, or the Ford, Dodge, Studebaker, Buick, Paige, Detroit, Chalmers, and many other makers of cars and trucks would not recommend the adoption of the Universal as standard garage equipment.

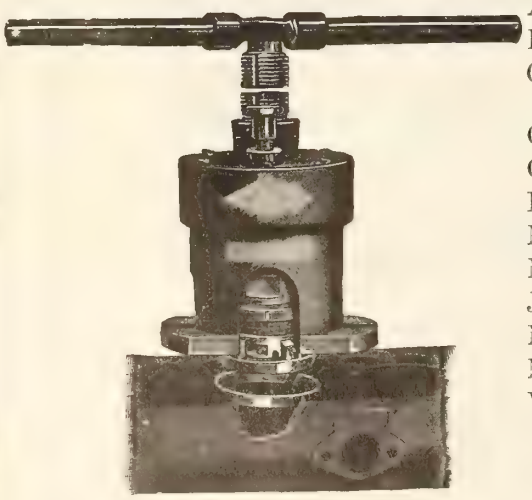
4. It enables you to give an extra service to your customers that will result in increased business.

5. The Universal Cylinder Reboring Tool has proved itself a success in every shop into which it has been introduced, whether operated by hand or power.



Operating with power-driven drill press

The following distributors of the Universal Cylinder Reboring Tool also sell and recommend "Wilkie" Piston Rings:



Operating on a detachable head motor---by hand

Aikenhead Hdwe. Ltd., Toronto.
Border City Auto Supply Co., Windsor, Ont.
Canadian General Electric Co., Limited—All branches.
Great West Saddlery Co., Ltd., Winnipeg.
General Supply Co. of Can., Ltd., Winnipeg.
Inter-Ocean Auto Co., Ltd., Montreal
Marshall Wells Co., Ltd., Winnipeg.
Maclin Motors, Ltd., Calgary.
John Millen & Son, Ltd., Toronto.
Millen's B.C. Ltd., Vancouver.
Motor Products, Ltd., Winnipeg.
Wood-Vallance, Ltd., Winnipeg.
Wood, Alexander & James, Hamilton.
The J. H. Ashdown Hdwe. Co., Ltd., Winnipeg.
Bowman Bros., Ltd., Saskatoon and Regina.
The Chapin Co., Calgary
Great West Electric Co., Ltd., Winnipeg.
Hyslop Bros., Ltd., Toronto
Keyes Supply Co., Ltd., Ottawa.
Marshall Wells Alberta Co., Ltd., Edmonton.
Motor Car Supply Co., Ltd., Calgary.
Western Motor Supplies, Regina.
Wood, Vallance & Adams, Ltd., Calgary.
Wilkinson-Kompass, Ltd., Winnipeg and Hamilton.

Manufactured by

Windsor Machine & Tool Works

312-316 Pitt Street West - Windsor, Ontario

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 | TORONTO, MAY, 1921 | Number 5

Automobile Industry Shows Improvement —Dealers Are Selling

Automobile Industry Has Not Yet Completely Recovered, But There Are Convincing Signs That the Courageous Facing of Situation, and Employment of Intelligent Publicity and Salesmanship by Dealers Are Bringing Results

WITH the coming of spring the automotive industry is awakening to new life and showing every sign of a sturdy growth and of blossoming into fruitful business. Like the crocus and the violet, the automotive industry responds to the promptings of spring. It just naturally revives at this season, but just as the careful gardener, by nursing and coaching the early flowers, may help Nature to bring them to a more perfect maturity, so may the automotive dealer, by persistent and skillful business methods and salesmanship, help the automotive industry to a better and larger business. This is being borne out by results achieved in some sections by wide-awake dealers.

There is nothing to be gained by shutting our eyes to the fact that spring business has to be brought through a hard surface soil. The surface is hard and requires a deal of cultivating, but the man who manipulates the hoe and rake properly is having the satisfaction of seeing his business grow steadily and persistently.

Intelligent advertising is the automobile dealer's hoe, and canvassing and salesmanship his rake. With a constant application of this combination the most obstinate sales resistance can be overcome.

The Energetic Dealer Is Getting Results

There has been too much pessimistic speculation concerning the prospects of the automotive industry during 1921. The industry has no room to-day for the pessimistic salesman. We will admit again that business conditions are difficult, but they are by no means hopeless.

The energetic dealer is getting results.

He figured early in the year that a greater effort was needed to thaw out the winter of the so called buyers' strike. And he made the effort, with the result he has pulled his sales up to normal, and, as in many cases, to a slightly higher level. It meant work to achieve that much and will mean more work to maintain the level.

Automobile dealers visited by M. T. I. in several Western Ontario cities were, with a few exceptions, optimistic as to the prospect for good sales.

One dealer, who sells a fairly high-priced car, and who had a turnover last year of a quarter of a million dollars, said that he had no complaint to make about business. It was good, he said, and he expected to repeat in 1921 his record of 1920.

Business What Dealer Makes It

He was of the opinion that business is what the dealers make it. If a dealer says that cars can't be sold he is not likely to sell any. But if he has plain ordinary gumption, judgment, foresight and level-headedness, and goes out to look for sales, instead of waiting for sales to come to him, he will have no reason to say that business is dull.

Another dealer selling a low-priced car intimated that his business for the first quarter this year was double that of the corresponding quarter of last year. He sold sixty-one cars in March and an equal number in April. The bulk of these sales were to the farmers of the surrounding district.

Some Delay in Deliveries

In the same city another dealer said his sales this year were slightly better than last year. Both of these dealers mentioned that closed models were popular, and on that account, and owing to the fact that the manufacturers slowed up on production during the winter and early part of this year there has been some delay in delivery of certain models. One of these dealers said there were orders for closed models on his books, which, up to that time, April 28, he had been unable to fill.

Business Picking Up in West

In the Western provinces the automobile business is picking up and assuming a more normal aspect. The spring business, although below the level of 1917 and 1918, is showing encouraging signs of developing into good business later in the year. As the West derives its revenue primarily from the land the financial position of the farmer is of first importance. The farmer is spending rather cautiously this spring and dealers don't anticipate any great increase in business until the farmer is able to ascertain what the crop outlook is.

However, under these conditions it is surprising to what extent the volume of sales has been maintained in some parts of the West.

Advertising Necessary

As the result of a trip through a section of Western Ontario, M. T. I. has come to the conclusion that, while there is, speaking generally, a reluctance on the part of the public to buy, dealers who are aggressive, who employ systematic advertising—in the newspapers, by individual letters, and by road signs, and who follow this up by a thorough canvass are meeting with success.

One of the most encouraging signs during the past month of an early return to a normal condition in the automobile industry is the resumption of operations by automobile factories which were shut down, and the taking on of more men, and a return to full time by other factories which were operating with reduced staffs on a short-time basis. Some of these factories have many orders on hand and if there is a big demand in the near future there will be danger of a car shortage.

"DON'T STOP, YOU'RE ALMOST OUT OF THE WOODS."
—Chapin, in St. Louis Star.

Stimulating Your Small Engine Business

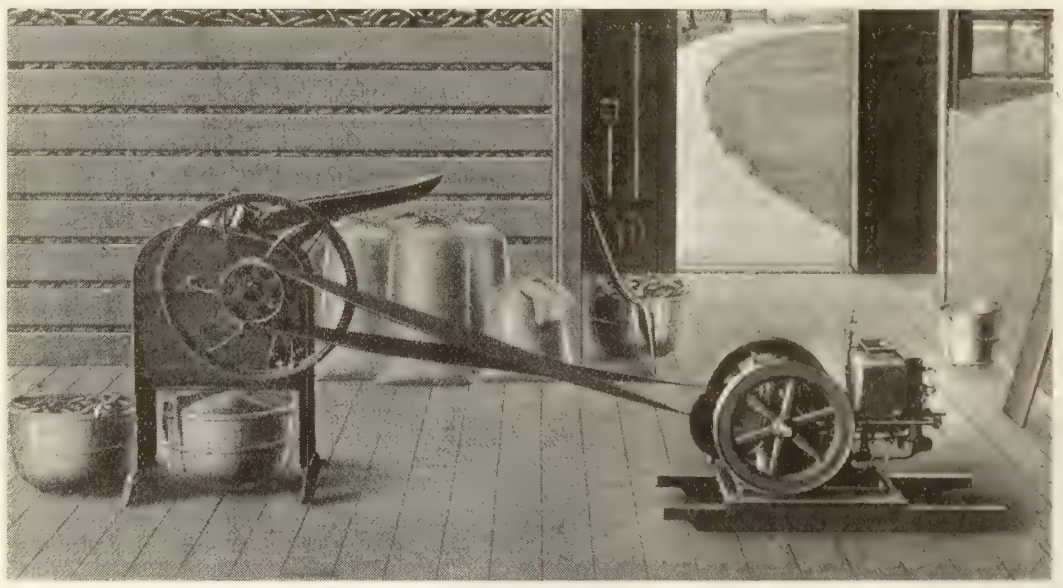
There is Small Engine Business in Your Territory That is Big—When Talking Engines Keep in Mind That Your Strongest Argument is the Time and Labor They Will Save on the Farm

By R. S. WILLIAMS

IT was a busy little store in a busy little town on a warm Saturday afternoon in April. The scene was typical. The farm women, with wide-eyed youngsters tugging at their skirts, were assembled in little groups animatedly discussing the kindred subjects of the week, or else were bustling about making purchases of bacon or calico, according to the particular section of the store they chanced to be in.

A few men lounged over the tobacco counter in the rear, or fingered the neckties on the rack, each keeping a watchful eye meanwhile on the feminine portion of his family, knowing that as soon as the "trading" was finished it would be home—at thirty miles an hour—to get started with the milking.

Mrs. Edmund, wife of a prosperous farmer, hurried into the store and deposited on the counter a huge basket of eggs effectively packed in oats. Heaving a sigh of relief, she exclaimed: "There, I never saw the hens lay so as they have since this warm spell. Here is ten dozen in three days. I nearly broke my back gathering them, too."



In the scramble for tractor sales is the implement dealer overlooking the small engine?

"So!" commiserated the rotund little proprietor, "Why don't you make Jim gather the eggs with that new tractor of his?"

"Say—Jim Edmund gather eggs! I can see him doing any such a thing, and that tractor is too busy in the field to be any help to me. I can stand out in the hot sun and pump water for the stock while Jim plows with his tractor, half asleep."

"Well, I never," replied the merchant. "I supposed, of course, when I saw that tractor going out that all your troubles were over."

"I should say not," snorted Mrs. Edmund, as the merchant began to count out the eggs, "that tractor is all right in its place, but it doesn't help me pump water when the windmill stops, and it doesn't turn the cream separator, or the washing machine, and it doesn't split any kindling for breakfast."

"Now, I never thought about that, but, of course, it don't," said the merchant. "You ought to have a little engine to do your work, hadn't you?"

"Yes, it would be a big help, if I could learn to use it."

"Why don't you send Jim to see Butler," suggested the merchant, "he has some dandy little engines."

"No, sir, when he gets around to buy me an engine I am going to be on hand to pick it out. I know what I want, and I've got to run it. Besides, when he gets up to Butler's he always comes away with something for himself."

Is Engine Business Being Overlooked

Now what is the answer? Are the implement agents of this country negiecting a productive source of profit? Is it possible that farm women, as a class, are doing by hand a great many tasks that should be harnessed to an engine? In the scramble for tractor sales isn't it quite likely that some valuable engine business is being overlooked?

Now when we come to think about it a tractor won't do the little annoying back-breaking jobs that make a woman, and a man, too, for that matter, prematurely old. In other words, the small engine business is not a dead issue by any means and should be propagated by systematic sales efforts. It is a fact that from 6 horse power up portable and stationary engine sales have fallen off. When a man wants to invest as much as the price of a 6, 8, or 10 horse power portable engine he has so near approximated the cost of a small farm tractor that it would be foolishness not to make up the difference and get the more adaptable power. But while sales of the large portable and stationary engines have diminished the sales of small engines, 1½, 3 and 4 horse power, have increased and represent a profitable end of any agent's business. It simply requires a little initiative and imagination on his part to develop this trade to the proportion it deserves.

Many Tasks for Small Engines

There are many tasks on the farm that do not lend themselves readily to tractor power. First, because usually the tractor is busy in the field at some big job, and second, because these little tasks are so located that it is not handy to hook them up to a tractor, to say nothing of the expensive power that would be wasted.

Take the pumping of water, for instance. What proportion of the farms in your community are equipped with a small engine and pump jack? True, a lot of them have windmills, but a windmill is not very dependable. It is worthless when the wind does not blow, and it has a bad habit of blowing over occasionally in a heavy gale. If it is out of commission, it is sure to be at a time when most needed and the farmer or his hired man or the farmer's wife must toil over the pump handle. If a man with an engine should happen along at such a time he would not have much trouble disposing of it.

Separating is another job that usually is done by the women. It is no snap either to turn a big separator up to speed, and unless it is turned up to speed the quality of separation will be low. Here is another task for the small engine. A friction drive pulley on the separator will prove a boon to the already overworked housewife. The churn, too, should be power driven—to save feminine muscles and to produce finer butter.

Engines and Washers

Then there is that disagreeable, but periodically necessary task—the family washing. Every farm house in your territory not already equipped is a live prospect for a small engine and power washer. During the past twelve months hundreds of thousands of electrically-driven washing machines have been sold in towns where electric current is available. Page advertisements in the big national weeklies have become common. All this advertising is a direct aid to you in creating an interest and desire for a power washing machine. Not many farmers can tap an electric current for power, but they and their wives read these well-written advertisements and the desire for modern laundry equipment is aroused. You can capitalize this desire and at the same time save the farm women of your community many a back-ache by making a determined drive on small engine and power washing machines. The market is so big and the possibilities for profit so great that any reasonable effort will be amply repaid. With a little study you can qualify yourself to offer suggestions as to sizes and style and also be of invaluable assistance in helping to install the right machine in the most effective way.

Farm Lighting Plants

While the market for power laundry equipment is perhaps the most promising from the standpoint of volume there is another field that offers unlimited profit to a live, wide-awake agent—and that is the farm lighting system. There are all varieties and sizes of light plants, from a little twelve lamp system up. These are not difficult to install and the profit they pay is worth having. Even though the prospect already has an engine he will usually want a separate engine for his lighting plant.

Lights require steady power, and this can be made only by a good engine of sufficient size and substantially anchored. It will pay any agent who is located in a section not tributary to electric light and power to spend a little time developing the trade on lighting plants. There is nothing that adds cheerfulness and a modern air to a farm so much as plenty of electric lights. Doing the chores in a barn flooded with electricity is not half the disagreeable task that it is when accomplished only by a weak, smelly lantern.

Way to Success

The way to make a success of the small engine business is to tie up to some one well-known and reputable line of engines. Don't clutter up the floor with half a dozen lines of engines and expect anyone to believe statements about a certain one of them. Pick a line of engines that presents stability and a sufficient wide range of sizes and then sell yourself on it first.

Set up sample sizes and if possible have them hooked up to representative power machines so they can be used for exhibition. Keep them in good working order and shined up so they will give a good account of themselves. Some manufacturers supply cutaway models of the engine showing valve action, piston movement, etc. These are valuable in explaining the operation to inexperienced buyers. Special display stands also are supplied for small engines,

(Continued on page 29)

By Courting System He Won Success

This Dealer When He Started in Business Soon Learned the Value of a Proper System —Common Sense and Ordinary Knowledge of Simple Arithmetic are all the Mental Requirements Necessary for Any Dealer to Systematize His Business

By FRED J. HUNTLEY

WHEN Samuel Cass engaged in the garage business a few years ago he believed from the start he had every prospect of success. There were few places in all the country where a new garage was more needed than right there in the town chosen by Cass. Motoring was becoming more popular every day, and he could see nothing but good profits and continued prosperity.

Beginning with the very first week the Cass garage started to grow and so rapid was its progress that it is known now over a large section of the country for the excellent service it renders. There always has been an atmosphere about the place that seemed to inspire confidence and bring the patron back again when his machine is in need of attention.

When Samuel Cass first opened the garage he made up his mind it would be run on modern business principles which would cover everything about the place, starting from the office and extending clear back to where he kept his supplies and repaired the machines. He soon found it was poor business to tie up his capital in unnecessary equipment and supplies and so he started out at once to learn just what was in most demand. When he found that a certain brand of lubricant was more often purchased than any other he specialized in that. He found he could apply this principle to about everything he carried and so he regulated his buying accordingly. The result has been that he never has any amount of supplies on hand that are not turned frequently into profits.

Mr. Cass, from the very start, was fortunate in hitting on a good system of departmentization and bookkeeping. There's nothing complicated about it either, but it is effective and furnishes him with figure information that shows just how his business stands every day in the year. He has made each department correspond exactly with the column headings in his combined journal and cash book. These headings are classed as tires and tubes, washing, vulcanizing, storage, car sales, charging, rental, gasoline and grease, repairing, general supplies and miscellaneous floor service. Duplicate sales slips form the basis for crediting or charging customers, a slip being made out for every transaction.

Every person who has authority to make charges or give credit is assigned a drawer in the cash register. At the end of the day the bookkeeper empties each drawer, balances the cash and makes an analysis of the day's business for cash sales, charge sales, cash on hand and miscellaneous sales.

Next, cash and charge slips are segregated by departments. The amount of slips in each lot then are listed and totalled. After all the slips have been added according to departments a grand total is obtained, which shows in the aggregate the amount of charge and cash sales for the day.

After the daily analysis has been completed the bookkeeper posts the total of the department sales to the combined journal and cash book. Received-on-account slips, merchandise credits and allowances constitute the remainder of the posting medium. From day to day various columns in the combined journal and cash book are footed. The total of debits is then checked against the total of credits, and the fact that they agree assures the bookkeeper the postings are correct. At the end of the month these columns again are footed and the total amount posted to the ledger accounts.

After the analysis of the sales slips has been made they are filed away in the customer's folders. The latter are arranged alphabetically and the slips remain in them until the end of the month, when duplicates are made and attached to the statement before it is mailed, thus furnishing the customer with itemized information regarding his account. The original sales slips are attached to the duplicate statement and after they have served as a medium for posting to the ledger they are filed away together for future reference.

It is not difficult at all for any garage owner, no matter how small his business, to have the same accurate figure information about his business as Mr. Cass is getting every day. Common sense and ordinary knowledge of simple arithmetic are about all the mental requirements necessary. You will be surprised to see what may be accomplished in the way of building up a business when accurate figure information is always at hand.

If You Are Starting a Painting Department

Here Are Some Points Which You Will Find Useful—Automobile Painting is a Very Profitable and Rapidly Growing Branch of Automobile Repair Service

By H. SCOTT

THE garageman who does not include automobile painting in his service to the public is passing up a lucrative and rapidly growing branch of automobile repair service. It is a side line which is soon learned and does not require expensive equipment.

The first requirement is a paint and varnish room. A portion of the garage should be boarded off for this purpose and made as dust-proof as possible. This is very important for dust and paint never did, and never will, get along well together. Having arranged the room, see that it is well ventilated.

Right at the commencement it is essential that the repairman be impressed with the necessity of using only the best grade of paints and varnishes. He should have in mind all the time that success comes through good work and good work can only be obtained by the use of first grade materials.

Selection of Brushes

Next in importance to good paints and varnishes is a selection of brushes. Poorly constructed brushes are fatal to good painting and varnishing. The test of a good brush is its ability to hold its hairs. A brush which cannot stand this test has no place in the automobile paint shop. Good tools for the painter are therefore absolutely essential; they quicken his producing powers, and likewise improve his work as compared to what it may be when inferior tools are used. Several types of brushes are needed: narrow brushes for striping, medium width for corners, etc., and good wide ones for the main body work and varnishing.

Having secured the necessary tools the repairman will find it advantageous to do some practise strokes on some of his own cars. Above all, it should be borne in mind to stroke all the one way. Reverse strokes will leave brush marks. After a little practise the repairman will be surprised how quickly he will develop a good, clean, smooth stroke.

The handling of colors is next in importance.

Do not tell car owners that you will paint any color they want. This is not fair to you and misleading to them. For example, suppose a car owner comes to you with a car that some two or three seasons ago was a deep blue. "Say," he exclaims, "I want to get my car painted and I saw just what I want. It was a big car and it had such a lovely shade of yellow. I think it was canary yellow. Duplicate that color for me, will you?"

Don't say you will, but explain to him if you paint his car a yellow over blue the result will be a sort of dirty green. Tell him frankly that the only way to do a real job would be to burn off the old paint, scrape and rub the body thoroughly, and start afresh. Hint to him the expense it would put him to, then watch him ask for your advice. Then is the time to get in your heavy artillery. Suggest to him that he keep the car a dark blue, or a black. **In other words, keep the color near the original, so that the least possible cleaning and scraping has to be done.** Briefly, the matter can be summed up as follows. Study the blending of colors and color values in general, then the rest will come easy.

An Actual Order

Now let us suppose we have an actual order, that of painting a dark blue car to a black. First of all, wash the car thoroughly. Be sure all grease is removed, even from the metal parts. Having done this, proceed to sandpaper the body and the metal parts with emery paper if they require it. On completing this operation be sure to wipe off any grit that may be left.

Depending upon the condition of the car, give it one or two coats of filler. Should the car be in extra good shape no filler will be necessary. The same holds true of painting. One or two coats can be applied, depending on the car's condition. Above all, make sure that each coat of filler or paint is dry before applying another. The varnish comes last, and here is where you make or mar the car.

Take your time on the varnishing for a little extra time is well spent. Be sure you cover the entire surface. Do not leave streaks unfinished or the result will not be as nice as you would like. Having completed this step let the car dry thoroughly and keep all possible dust out of the department.

Taking the Ire Out of the Tire Business

The British Columbia Automotive Dealers' Association is Determined to Clean Up the Tire Trade—Aim to Abolish the Price-Cutter and the Parasite

By ROY A. HUNTER
VANCOUVER REPRESENTATIVE

A YEAR ago the condition of the tire trade in British Columbia was in such a chaotic condition that anyone, anywhere, any time, could buy tires at any price.

"It was not necessary to know someone who worked for the manufacturer," said one of the officials of the Retail Merchants' Association in conversation with M.T.I., "it was sufficient to have a friend who knew a friend who would give you the name of someone in the wholesale trade, and a tire could be purchased at a close figure."

The Price Bugbear

So demoralized were the trade conditions in this line that it was impossible for the legitimate retailer of tires to say, "This is the price." The customer used to say, "This is what I will give for that tire," and if the retailer would not "come across" the prospective purchaser would say that he could get it at that figure down the street, and in most cases that purchaser was absolutely right. The consumer considered the dealer's figure on a tire merely the starting point for an argument.

Previous attempts had been made to rectify this unwholesome condition, but had proven abortive for the reason that those attempting the organization work had not sufficient experience to make their association a factor strong enough to be effective. At the best such associations had only represented Vancouver city and, of course, were not in a position to act for the whole of the province.

Tire Dealers Organize

Late last year the tire dealers approached the Retail Merchants' Association, which has a splendidly functioning organization created, and after a few meetings, which were well attended, the Provincial Automotive Section of the B. C. Board of the Retail Merchants' Association of Canada was formed on September 20, 1920.

The first officers of the new body were: President, R. J. Jameson, of Jameson & Willis, Victoria; first vice, J. Pound, Main street, Vancouver; second vice, H. B. Neilson, Howe street, Vancouver; treas., E. R. Wilson, of Nanaimo, and secretary, A. J. McGavin, of Victoria. These officers still hold office.

In commenting on the tire retailing situation and the practice of tire manufacturers of selling tires outside the legitimate trade, Mr. Bougham, secretary of the Retail Merchants' Association of British Columbia, said recently:

"The misguided zeal of the representatives of large manufacturers in their eagerness to increase their turnover immediately, without regard to a sane, constructive, permanent policy; is probably the chief difficulty in the way of arriving at a time when the business of retailing tires may be looked upon by the public with respect."

Negotiations were immediately opened up to have a conference with the rubber manufacturers with a view to working out an equitable selling policy. The meeting culminated in a mutual understanding which went into effect in December of last year. This arrangement has proven as satisfactory as could reasonably be expected. The agreement was, of course, experimental and has provided a basis for further negotiations. An effort is now being made to define more clearly the status and privileges of the tire dealer who gives service to the public, as against those who merely sell tires as a side line.

The Principal Difficulty

One of the principal difficulties at present is to regulate the practice in some districts of permitting grocers and general store merchants in districts provided with a service station to sell tires. Some companies which have had these grocers on their books for some time seem interested only in getting their accounts paid and do not view with favor the limitation of their outlet to the legitimate tire dealer. This reluctance in selecting their distributors may be quite natural, but many in the trade consider that indiscriminate selling could be defended as a principle of good merchandising.

This question, as well as many others, will likely be adjusted as the association gains in strength, as it is speedily doing. The manufacturers are also begining to realize that they are dealing not with a small, ineffectual, local body of protesting tire men, but with a representative unit of a national organization.

Much Remains To Be Done

To the credit of the retail tire dealers it must be said that they have interpreted their obligations as members of their association very loyally, but it is not to be expected that conditions as chaotic as those that have existed in the tire business in British Columbia and which were the result of years of aimless drifting, could be made ideal overnight. Much remains to be done, but the organization seems to be nearing that point of efficiency when the proper solutions to the dealer's problems will have a better chance of being applied. Fundamentally, the difficulties which beset the tire distributors are closely akin to those affecting many other lines, and are in a large measure due to the fact that no standards of ability are set by which those desirous of entering the retail business can be measured. The secretary of the Retail Merchants' Association in B. C., Mr. Hougham, in commenting on the progress of the new section, said:

"The misguided zeal of the representatives of large manufacturers in their eagerness to increase their turnover **immediately**, without regard to a sane, constructive, permanent policy is probably the chief difficulty in the way of arriving at a time when the business of retailing tires may be looked upon by the public **with respect.**"

Information on Lightning Rods for Dealer

By J. C. NEALE

THAT something must be done to prevent the tremendous loss which Canada suffers every year from fires caused by lightning flashes is becoming more apparent every day.

At one time—and not so very many years ago either—lightning losses were borne with a stoical indifference, or with the Calvinistic acceptance that such were the disposition of the Divine will. Then science made the startling discovery that electrical force could be harnessed and controlled by man, and then the further discovery that electricity and lightning were very closely allied, if not one and the same thing, in different degrees of intensity. This latter discovery was of course soon followed by the invention of the lightning rod—which was designed and installed to "carry off" the lightning flash should it happen to strike.

The early lightning rod was not one hundred per cent. efficient in preventing fires. There were many theories as to the proper system of rodding—and there were also agents of the unscrupulous class who installed rodding systems without worrying about any theory at all, except that the quicker the job was done the greater the profit it yielded. Such small matters as proper grounding or carefully planned systems to suit special buildings were not even considered. In consequence lightning rods fell more or less into disrepute.

But despite the fact that many buildings were improperly rodded, it gradually came to be noticed that the numbers of fires occurring in rodded buildings was considerably less than the number occurring in unrodded buildings. And further investigation revealed the fact that where the rodding was properly and carefully done the loss from lightning was practically negligible.

Scientists continued to experiment and investigate until, finally, they were able to state that rodding installed in a certain specified manner (as will be outlined later) would prove more than ninety-nine per cent. efficient in preventing fires. They went even further than that and proved that such a system of rodding owed its efficiency to its ability to actually **prevent** lightning flashes as much as to its capacity for carrying them off if they did occur.

But all this time nothing was done to determine just how great a menace lightning was to the farmer. Only during the past few years have fires in rural districts been thoroughly investigated by otherwise disinterested individuals to determine their causes. But the evidence obtained during this short period is an eye-opener. Investigation carried on by the Ontario Fire-Marshal shows that 378 barn fires occurred in Ontario during 1920, of which 115 were caused by lightning. In 1919, 102 barn fires out of 277 were caused by lightning. Of these 217 lightning-caused barn fires occurring in the past two years, only one was in a rodded building. Such evidence is conclusive without further enlargement.

The seriousness of the fire menace in rural districts where no fire-fighting apparatus can be maintained, is further evidence by statistics from the office of the Fire-Marshal. In 1919, the average loss per fire in the four largest cities of Ontario was $92.50 per fire; in the small cities and towns the average loss was $160.50 per fire; whereas in the rural districts the average loss was $714 per fire. Moreover, in 1919, something over seventy-eight per cent. of the total lightning losses in the province occurred in the rural districts. It would seem then that where there can be no adequate means of fighting fire once it gets a start, everything possible should be done to prevent its getting that start.

No system of rodding may be guaranteed to be one hundred per cent. efficient. Lightning will at times play pranks which baffle all scientists. But certain lightning rod companies have evolved a system of rodding which is so nearly perfect that they are willing to assume all risk of loss themselves, and they issue certificates to purchasers that all lightning losses in buildings be borne by them. The essential points in the system employed by such companies may be briefly outlined.

The first essential is proper grounding. All groundings in ordinary soil are put down to a depth

of not less than eight feet, to insure their reaching permanent moisture. When rock happens to be very close to the surface special groundings have to be made, according to the particular conditions prevailing. The same cable is used in grounding as is used to run over the building. The groundings are not made down the gable ends of the building as in the old-time systems but are made at alternate corners. A continuous cable is used, running up the south-east corner (for instance), to the eave, then along the edge of the roof, along the peak, down the north end of the west slope of the roof, and down the north-west corner to be grounded there. The cable is nailed tight to the roof, not set up on brackets or insulations. Points are erected close to each end of the roof, and at intervals of not more than twenty feet along the peak. Where cupolas or ventilators occur the main cable is passed through or around them on the same level as the peak of the roof, and a point is erected on each ventilator and connected to the main cable by means of a short piece of equal size.

All metal fittings on or in the building are carefully connected with the main cable, sometimes by means of a finer connecting cable — eavestrough, water spouts, steel hay-fork tracks, litter carrier tracks, sliding door tracks, etc. Both ends of all such metal parts must be connected. The purpose of this is to prevent small flashes from one piece of metal to another.

During an electrical storm all pieces of metal become highly charged by "induction" and when there is no direct metallic connection, a flash is liable to occur from one to another. Such a flash even though small, might easily ignite chaff or other highly inflammable material in its path. Where the ends of metal are too far from the main cable to be linked up satisfactorily they are grounded separately. All connections must be solidly made.

Where avoidable, groundings are not made through or near a manure pile, as direct contact with liquid manure will cause a quick deterioration of the copper cable.

That lightning is a constant source of danger was brought out most forcibly at a convention of lightning rod dealers recently. One dealer related to the convention how he had at Burgessville, Ont., endeavored particularly to sell rods to two farmers in his district. Both had refused to buy—and during the first electrical storm this year, in March, both of their barns were struck by lightning and burned. It pays to play safe.

What is Wrong With Implement Business?

According to the Writer the Farm Machinery Business is Sorely in Need of Two Things—A General Cleaning Up Day, and a Strong and Thoroughly Representative Organization

By LLEWELYN HALL
PRESIDENT ONT. IMPLEMENT DEALERS' ASSOC.

WHAT is wrong with the retail implement business of to-day? This question is asked repeatedly by travellers, business men, bankers and farmers throughout the country.

If the average dealer's business were sifted through a regular business audit, would it show a living wage for his endeavor, or would it reveal that he was financially "in the hole"?

It is a fact much to be regretted, that in the farm machinery industry very few dealers keep adequate records. How many could, at a moment's notice—yes, even a week's notice—give an intelligent account of the financial position of their businesses? I am afraid the number would be very small.

Accounting of Vital Importance

Keeping records is of vital importance to the implement dealer, especially when a large percentage of the business is conducted on the consignment policy. It would be a great blessing to 90 per cent. of the farm machinery retailers in the country, if it were possible to have a check made by experts of their settlement sheets.

Many dealers keep no dependable records of their transactions with the manufacturers, but depend to a large extent on the accuracy of the statements rendered them by the manufacturers. True, invoices, etc., are filed on a nail in the wall, and other like places, but if there is no attempt to enter transactions in a book, and everything kept up-to-date, the dealer is at the mercy of the manufacturer, and even the customer, should he lose some of his papers, as he is liable to do.

So if a dealer kept books, and had them checked over regularly, errors, which might occur on both sides, could be easily traced and corrected. Then a lost statement or invoice would not be so great a source of anxiety.

As it is at the present time, the agent usually takes his settlement as the manufacturer gives it to him, assumes that it is correct, and goes on for another year.

This method of doing business, in the writer's estimation, is the reason why so many implement dealers fail to make good. They don't know whether they are making money or losing it. They may be conscious of leaks somewhere but have no means of locating them. They may be handling a line which does not pay them a sufficient profit. They may be handling another which is a liability to them.

The dealer is selling implements primarily to make money, and in order to know whether he is doing so, or not, he must keep books. He must be able to put his finger on a line which does not pay. He must be able to tell why it does not pay. If the fault is his he must adopt methods of remedying it; but if the fault lies in the line not offering a sufficient margin he can eliminate it.

Average Dealer Operating at a Loss

And this leads me to say:

The average implement dealer on a number of lines, when we take the necessary overhead expenses into account, is operating at a loss!

I am speaking of such lines as seeding, haying, reaping machinery and manure spreaders.

Let us imagine we are selling one of these machines. We hire a salesman to canvass John Brown

LLEWELYN HALL
President Ontario Implement Dealers' Association

for the sale of a spreader. After making two trips, say, he finally convinces Mr. Brown to buy. Now what did it cost to make that sale? Wages for the salesman for two days at $4 a day is $8, and cost of operating a car for two days at $4.50 a day is $9—one must consider consumption of fuel and oil, and depreciation of tires, etc., on the basis of a yearly period — making in all a total of $17 before the spreader has even been seen. There are other charges, such as experting and setting up, which will require another day, and if the customer lives very far out in the country you can add $4 each for two men, making $8, and passing up the cost of the car used for hauling the machinery, we have a total cost of sale and setting up of $25.50. After adding another $2.50 to this total for service the balance of the commission is the dealer's.

Now, in order to make out as good as these figures, the dealer must sell a machine every three days. The commission actually left is so small that one customer failing to pay his notes would kill the profit on a dozen such sales.

This is what is actually happening in Ontario and the other provinces every day. Such a state of affairs can't go on indefinitely. And as it is a big undertaking to make the necessary reforms, it is absolutely necessary that the dealers organize.

Whole Business Needs Overhauling

The whole farm machinery retail business needs an overhauling!

Now that we have a dealers' organization in Ontario, it is the duty of every dealer who has the interests of his calling at heart to become associated with it and do his best to bring about the much-needed reforms.

The implement dealers also can do a great deal to help themselves by cleaning up their places of business and putting them into some sort of system. It is a very discouraging and distressing sight for any business man, used to good offices and respectable looking warehouses, to visit the average implement dealer's store.

It is high time we farm machinery dealers made some move to set our houses in order.

We will have to clean up so that a person can enter our stores without running the risk of falling over articles littered all over the floor. Then, as pointed out at the beginning of this article, we must instal a proper accounting system.

Dealers' Association

The dealers' association has a noble work ahead of it, and if every member and dealer co-operate great things can be accomplished.

Speaking in the capacity of president of the Ontario Implement Dealers' Association, I wish to state that we do not intend to fight the manufacturers for anything which is not legitimately coming to us. We want to co-operate with them to make our business a bigger and nobler one. But we do want to impress on the manufacturers the fact that we as retail men are a part of their very life and existence. We are an important part of their organization which has taken them years to build. Without our aid their force of travellers would be only about 15 per cent. efficient. Their advertising would not be followed up; and, in general, without their retail organization, they would not sell more than 25 per cent. of what they sell now.

Taking all these things into consideration the need for a properly functioning association is very great. Given the proper measure of support of all of the dealers, and with the heartiest co-operation of all, there is no reason why such an association should not raise the implement retail business to the level of that of the finest business in the land.

Tractor Dealer Must Take the Initiative

The Sellers' Market is a Thing of the Past—The Tables are Turned—The Buyer Has Become Passive—Under Present Conditions Nothing Will be Bought Until First It Has Been Sold

By H. G. WEAVER
IN THE TRACTOR TRACT

ABE MARTIN, the Hoosier Philosopher, says that the Brown Company Emporium sold 1,700 Ouija boards last year **and only one WASH BOARD!** It seems to me that this explains our present economic condition more clearly than any of the high-brow analyses that we have had on the subject.

Following the war most of us lost sight of the value of the dollar. Many of us spent all that we **had** made, **were** making or ever **expected** to make. We have tried to solve our problems by every method except through the sweat of the brow.

Business is not seriously sick—it's not typhoid, but merely a case of overeating. **We need exercise instead of rest.**

Conditions will not readjust themselves overnight. The sellers' market is a thing of the past. The tables are turned—the buyer has become passive. The seller must take the initiative. Under present conditions nothing will be bought until first it has been sold.

The National City Bank estimates the U. S. farmers' losses for 1920 as high as eight billions of dollars. Roger W. Babson gives it as one billion!

I do not know which one is right, but I do know that if we assume that the total wheat crop should have been sold at the May, 1920, price of $3.06 per bushel (which was the highest price reached during the past year), and if we take it for granted that all the wheat has been sold at the lowest price reached since that time **then the estimated loss is enormous!** If, on the other hand, we take into consideration the fact that some wheat was sold immediately following the harvest and before the extreme drop and then if we make a correction for that portion of the crop that is directly or indirectly consumed on the farm we get an entirely different figure.

Farming is business.

We've spent too much time talking about the farmers' losses and trying to figure the farmers' losses. Last year is gone forever, this year is well under way. Let's talk profits and let's show how profits can be made.

The business farmer is more interested in lower operating cost than in cheaper operating machinery.

There are always a few men who are farsighted enough to give intelligent opinions of future business conditions. A year ago such men were loudly warning us to slow up—to calm down—to cut out the foolish extravagance. It was good advice, but few heeded the warning. To-day these same men are urging us to forget the past and look to the future—the future of sound business prosperity. Will we heed the new warning?

We did not prepare for the business slump—most of us were caught napping. There is no need crying over the spilled milk. Let us get our house in order and make preparations for the era of sane prosperity that will surely come. A year ago we needed caution—to-day we need **courage!**

Attitude of the Salesman

Pessimism spreads like wildfire. We listen too much to the Big Noise. This is a time for calm thinking. The last three years have been exceptionally good years for both the farmer and the tractor dealer, but when we compare present conditions with conditions four years ago there is not such a contrast. Let us never lose sight of the fundamental fact, that irrespective of the business slump, people must eat and wear clothes. That, irrespective of disturbed conditions, the vast majority of our people are living just about the same right to-day as they were a year ago.

What, then, is to be the attitude of the salesman?

Two courses are open:

FIRST: **To sit back and keep repeating to himself and others that there is no such thing as an order, therefore it is useless to put forth sales effort.**

SECOND: **That irrespective of conditions, there is always a certain amount of business and that through redoubled energy and hard work he is going to get more than his share of that business.**

We can't travel with one wheel on the high road and one on the low road.

Either one will have to go up to the other's level or the other will have to come down before we can get anywhere.

The first is the attitude of the slacker, the quitter and the drone. The second is the attitude of the constructive optimist—the man who will come out ahead irrespective of conditions. And when the clouds have cleared away and business shall have been established on a firm foundation and prosperity sweeps over our land—it will have been to the credit of the peptomists—to those who have backed optimism with hard work!

Contest Between Buyer and Seller

It is the unexpected, the doubtful or the unknown that always scares people. Human beings are disturbed very little by the things that they expect or by the things that they understand. **Salesmen are human beings.** Let us recognize this cardinal principle of marketing:

There always has been and always will be a contest between buyer and seller. The buyer wants more goods for his money. The seller wants more money for his goods. Since the very beginning of barter and exchange on down through our present complex system of commerce the buyer has always stood for lower prices. In the light of the past the present day salesman should anticipate a price resistance and should be prepared to meet it.

Right now the farmer frequently declares that he will buy no machinery until the price has been reduced in the same proportion as the decline in the price of farm products. When the farmer makes such a demand he is, in substance, asking the manufacturer to let the buyer set the price. Here is a logical answer to such a demand:

"We, of the farm machinery industry, are keenly interested in the problems of the farmer because our business is directly dependent upon him. We cannot prosper unless the farmer prospers. We regret the decline in the prices of farm products—we realize that the farmer is entitled to a fair profit—we are in sympathy with the co-operative movements for developing a more efficient distribution—we stand ready to lend a helping hand to farmer co-operative marketing organizations—at the same time it is hardly fair to ask us to adopt a policy that has been so disastrous to the farmer—namely: The policy of letting the buyer set the price!"

Let's Get Busy

The farm machinery business may be likened unto an electric current. It flows through the wires of banking, manufacturing and marketing. If any part of the circuit is broken the current ceases to flow. The salesman is the switch and unless he keeps the market contact closed the whole system is useless. Right now there is a greater resistance than usual. High voltage will overcome it. **Let's get busy!**

Tractors selling as low as $25 apiece would benefit no one until they were actually purchased and put into service!

DURING THESE TIMES AN AD IN YOUR WEEKLY NEWSPAPER is worth more than a horseshoe over your door!

Why do we speak of the tractor industry as a "game?" The word "game" implies a gamble, a risk or a chance. Even though an occasional farmer may have a disposition toward poker he doesn't like to mix it with his business and he doesn't like to play at all when the stakes run too high. The farm tractor is neither a gamble, a risk, nor a chance. On the contrary it does much towards eliminating the uncertain elements from farming.

There has been no over-production of farm products. There is no real surplus. For every bushel of grain there is, somewhere in the world, a hungry stomach waiting to be fed. For every pound of cotton there is a naked back that needs protection from the cold. Our serious problem is the problem of distribution and the best brains of the world are working towards its solution.

Ground Never Be Fully Covered

We hear much talk about the "saturation point." Personally I can't call to mind **any instance of a truly saturated market. I think I would recognize one if I saw it coming down the street.**

We talk about "having combed the territory"—it's a good thing to do, but it's never yet been done in any line, any time, any place, any where. Some of us speak of the automobile industry as being on the decline—as having been overworked. Maybe so, but let me tell you something:

I live in the city. There are three automobile dealers in the same block where I live. I know their wives and children. My office is in the heart of "Automobile Row." I ride to work in company with automobile men. I eat my lunch in among automobile salesmen. I frequently attend their sales conferences. I compliment their products and criticize their advertising. I rub shoulders with them close to 365 days in the year!

I do not own an automobile. I have never owned an automobile. I am not prejudiced against automobiles, in fact I rather like them. Whenever we have a nice warm day I envy the motorist. Every time I call a taxi I wish that I owned a car. Comparatively speaking, I am able to own an automobile. I can't recall a single time during the past five years that I couldn't have raised the price of a reasonably good car on twenty-four hours' notice. By all the rules of common sense—by all the laws of good business and high-pressure marketing, I flatter myself that I am a middling good prospective customer for a motor car. **But never, in all my life, have I been solicited by an automobile salesman!**

It may be possible that there are farmers right in your own county, or in your community or perhaps right next door to you who need tractors—who have the money to pay for tractors, but who have never been asked to buy tractors!

I don't know this to be a fact, but I say that it MAY be possible and it's at least worth some thought—right now while we have plenty of time to think!

The Tractor Salesman and His Problems

The Best Way to Sell Farmers To-day is to be as Nearly Like the Farmer as the Dealer Can be From Standpoint of Dress, Language, Appearance and Knowledge of Farming

By L. M. KLINEDINST

WITHOUT question, the man in overalls has the best chance to sell farmers provided he knows the farmer's requirements, knows every phase of farming thoroughly, and is able to meet these requirements with the tractor he is selling. The so-called "smooth guy," or the "silver-tongued salesman," has little chance to sell present-day farmers, unless he can doubly prove each and every assertion he makes regarding his tractor.

The point I want to make is this—that the best way to sell farmers to-day is to be as nearly like the farmer as you can from the standpoint of dress, language, appearance, and knowledge of farming, and offer only facts backed up by actual demonstration and personal experience.

The farmer has little confidence in the fellow who exhibits lack of real knowledge of farm problems in general, and his personal problem in particular. The most carefully worded sales talk is valueless unless it is founded on recognized familiarity with the subject.

What Should the Tractor Salesman Know About Farms and Farming?

1. He should know the size of every farm in his territory; how many acres are under cultivation; how many acres are not under cultivation, and why.
2. He should know how each farm is divided up—that is, how many acres the farmer usually plants in wheat, rye, oats, potatoes, alfalfa, etc.
3. He should know the yield per acre of each of the leading crops, and be able to estimate the approximate value in dollars and cents.
4. He should know if the farmer is tenant or an owner; if the farm is mortgaged he should learn the approximate size of the mortgage and how near paid off.
5. He should know the number of head of livestock of each kind.
6. He should know the condition of the farmer's present implement equipment.
7. He should know the farmer's credit standing at the local banks; whether he pays cash or buys on credit.
8. He should figure out approximately the net income of each farm.

All this information should be carded by the tractor dealer and kept ready for reference, as only in this way can the salesman know who his good prospects are, and accordingly concentrate on those immediate prospects. A small 5x8 card filled out for each farm will do the trick, and here is a suggestion for such a card:

Farmer's name.....Location.....

Owner..... Tenant..... Mortgage.....

Credit: GOOD BAD FAIR

Acres under cultivation....., Not under cultivation ....., Acres in Corn.....yield.....; Wheat..... yield.....; Oats.....yield.....; Rye.....yield.....; Potatoes.....yield.....; Alfalfa.....yield.....; No. Horses, Mules, or both.....; Cattle.....; Hogs .....; Sheep.....;

Condition of Implements: Wagons.....; harrows.....; plows.....; cultivators.....

.....

Present motorization of farm:

Motor cars.....; Motor trucks.....; tractors.....; gas engines.....

Calls, dates	Farmer's reason for not buying
.....	.....
.....	.....
.....	.....

Why Is All This Knowledge Essential?

When you go out to sell a tractor you must talk increased profits in production of corn, wheat, oats, etc. To do this, you must know acreage, yield per acre, and selling value, otherwise you cannot put up a finished sales talk. The job is only half done; you have not convinced the farmer that he can make more money—the very thing you must do these days to make a sale.

I have followed the tractor shows and demonstrations for more than four years; I have talked to hundreds of farmers and dealers at these shows; I have heard farmers discuss their problems with dealers and manufacturers; I have heard farmers comment among themselves on the possibilities of tractors; I have heard their arguments for and against power farming. As late as the Columbus Tractor Show in February of this year, I made a very extensive canvass of farmers, and it is a decided fact that the big majority of farmers to-day have a decided leaning to jackass farming in preference to power farming.

To date tractor competition is with the horse. Soon it will be one tractor against another

Tractor Competition Is Not With Other Tractors, But With Horses

In the early days, motor car competition was solely with driving horses. To sell a man a motor car you had to persuade him, and prove to him, that there was much more comfort in driving an automobile than in driving a horse and buggy. To-day that competition has changed—it is now one motor car as against another motor car. Likewise, to-day the tractor is now in competition with the farm horse, and will be until the farmer is fully sold on power farming; then the conditions will reverse and the competition will be one tractor as against another.

Why don't we quickly make up our minds to this fact and all join hand in hand and sell the tractor over horses? When that job is done, then sell one design over another. We ought to profit by our twenty years' experience in selling motor cars and trucks. The job should be comparatively easy, since any tractor, if it will work only part of the time for a short while, is a big improvement over the old method of farming with horses, and this fact can be clearly and easily demonstrated to the farmer if it is attacked in the right way. But, we must all be of one mind on the proposition; we must not confuse the farmer's non-technical mind with a lot of details regarding one design over another made by competing companies. That is all very good sales engineering talk when the farmer is ready for it, **but let's sell him the big idea of more and better farming by power first**, and when that is done, then we will sell him our design over that of our competitors'.

The farmer wants to know how to make more money, quicker, easier. Then why not build up our sales talk and our advertising around that idea? Enough figures have been accumulated by the various tractor manufacturers and dealers to show the farmer in dollars and cents the advantage of using a tractor. Now, if we assemble all this data and use it in all of our sales talk and in all of our advertising copy it will only be a comparatively short time until we have sold the idea of power farming, just as we sold the idea of driving a car in preference to a horse. The idea of farm tractorization must be sold definitely.

This is primarily, of course, a function of the tractor manufacturer, and his dealers, but should be assisted by the allied parts manufacturers.

Such an educational program has already been suggested in the States and acted upon in one of the recent meetings of the National Implement and Vehicle Association, and a great deal of work is being done in that direction, but it appears that this association should hold perhaps monthly meetings on this big subject of **More and Better Farming by Power**, inviting to these meetings representatives of the various tractor companies and allied parts manufacturers, in order to cement a closer, more co-operative spirit.

Agricultural Being Motorized

IN a few years virtually all large farms will be motorized, says the Implement and Tractor Trade Journal. Tractors, trucks and motor cars will be on all well regulated farms.

The return of normal conditions and prices will result in increased agricultural production. In a competitive market the ratio of success attained always depends upon the measure of efficiency employed.

It took a number of years to develop the tractor. Like all machines, it was more or less imperfect at the beginning; but time and experience discovered every defect and suggested the remedies necessary.

Having passed the experimental stage, it is now a power plant of marvelous worth.

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Why a Dealers' Organization

ELSEWHERE in this issue we publish an article from the pen of Llewelyn Hall, president of the Ontario Implement Dealers' Association, which should be read and pondered by all of our power farming dealers. In this article Mr. Hall discusses some of the burning questions facing the industry to-day, and pleads for a closer co-operation among the dealers with a view to arriving at a satisfactory solution. He stresses the importance of an organization such as the one he is at the head of, and is of the opinion that until the dealers are powerfully organized there can be no permanent amelioration of their troubles.

We are right behind him and his association, and will do all we can to lend our support. The condition of the retail end of the farm machinery business is far from being satisfactory.

The dealers themselves are not entirely free from blame. As Mr. Hall points out the average implement dealer does not keep books, and keeps a store that would be considered a disgrace in any other business.

There are, we are pleased to say, exceptions. We know of implement stores that would reflect credit on any retail business. But, generally speaking, too little attention has been paid to appearances.

Perhaps the greatest contributing cause to this condition of affairs is the fact that men enter the business with insufficient capital. They have just enough means to establish themselves in some old barn and take, at almost any terms offered, an agency for some line. All of the business is conducted on the consignment plan, with the result they are not dealers at all but merely commission agents. We are glad to say it is becoming more difficult each year for such a business to carry on. Until the implement business is on the footing of other retail businesses and is operated more nearly on a cash basis a satisfactory adjustment of all the present wrongs and abuses is practically impossible.

We are convinced the time is not far distant when that desirable condition of affairs will be brought about. Young and eager men with real business instincts and, what is more important, with ambitions, are being attracted to the business. They see in it great possibilities, and are determined to elevate it to the high position among retail businesses which is its by right.

We sincerely hope the Ontario Implement Dealers' Association will get the enthusiastic support of every legitimate dealer in Ontario, and that it will function only as an association for the betterment of the dealer. It should be kept exclusively a dealers' association.

We hope that the question now before the association as to the advisability of permitting manufacturers to become members and be represented will be answered with a decided No. Manufacturers under no circumstances should be allowed to participate in such an organization. It is intended for dealers and dealers only, and should be entirely free from the influence of the manufacturers. There is no suggestion here that the manufacturers if permitted to become members would abuse the privilege. What we want to point out is that the dealers should be at liberty to discuss their own problems, in their own way, thoroughly, and without any suggestion or influence from the manufacturers.

Another thing we would like to see incorporated in the rules and regulations for members is, that no dealer who persists in cutting prices should be allowed membership, and any member found guilty of cutting prices, and after due warning continues to do so, should be expelled. The price cutter is a trouble maker and a menace to the dealer who runs his business along business lines. He is only in the business for a little while because he cannot survive and cut prices. Therefore it is necessary for the legitimate dealers to protect themselves against the price-cutter, and the best way to do this to our mind is to organize against him.

Business is Improving

BUSINESS in the automobile and farm implement industries is improving. Although it is inclined to be spotty in these industries it is in the main showing a satisfactory growth as compared to other lines.

One very encouraging thing is the agricultural outlook. Spring conditions on the farms could scarcely be improved upon, and are well up to the 1920 standard. With the outlook on the farms good the automobile and farm implement industries can look with justification for a considerable resumption in buying on the part of the farmers.

Many dealers in both of these lines can show by their books that their business is well up to that of last year. Almost invariably they are the real live ones who go out after it. Not only do they get out in the territory but they employ every means of publicity.

It is a fact, which has been declared over and over again, but which requires to be driven home to the hilt, that the merchant must show the customer where he will benefit by purchasing a certain article. He must also be thoroughly sold on his line before he can sell the other fellow. The buyer has to be shown these days and insists on getting full value for every cent he invests.

The dealers who bombard their territories with newspaper advertising and personal letters, and back this up with real salesmanship and service are selling goods.

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On Accounting

BECAUSE of the article in the April issue of M.T.I. on "Keeping Track of Your Business" we have received a number of letters asking for information and advice on how to instal a proper system of accounting. As it is impossible to cover such a subject in a letter, M.T.I. has made arrangements to run a series of articles dealing with various systems of accounting and giving all information about books, forms, tags, etc. We hope to publish the first of this series in the June issue of M.T.I.

Sell by Appointment

THE fellow who sits in his little office waiting for the farmers to come in and buy his tractors may be dignified, but he does not sell enough to be considered effective, says the Power Farming Dealer. The selling of goods to farmers is haunted by a ghost, the thought of which makes many a farmer and farmer's wife shudder.

This pest of the past was the old-time agent. Sometimes he sold lightning rods, sometimes cream separators, and then again it was nursery stock. He usually turned up in the spring about two jumps ahead of the gophers and the cutworms and did as much to reduce the yield of corn as either, because it seemed to be his special mission in life to give the farmer a prolonged interview just at the time when it was important above all things that the corn planting go forward with all possible haste. Sometimes the thing the agent had to sell was something which the farmer could use to excellent advantage but this did not alter the fact that the agent was, as regards selling methods, in the same class as the book agent, the ribbon peddler and the patent medicine faker.

The farmers of to-day are more than ever business men, particularly those who are good prospects for power-farming equipment of one sort and another. Men in other businesses are accustomed to doing business by appointment. While it may not be possible to make all sales calls by appointment there are at least some farmers who will appreciate being treated like business men and with that real courtesy which considers the requirements of his business as well as those of the salesman.

The salesman who comes by appointment will find a welcome instead of suspicion, receptivity instead of a rather justifiable antagonism, and will be doing sales work in keeping with the substantial character of the power-farming-equipment business.

Why He Succeeded

1. He kept up with the times.
2. He did not try to do everything himself.
3. He took time for exercise and relaxation.
4. He maintained efficiency by developing able help.
5. He did not permit system to run into red tape.
6. He did not practice cheese-paring economy.
7. He did the little things worth while.
8. He developed his capacity for large things by avoiding the pitfalls of detail.
9. He took frequent inventory of himself and his stock, and, last but not least—
10. He was a regular and consistent newspaper advertiser.—Philadelphia Bulletin.

Specializing Your Accessory Business

By F. H. SWEET

The automobile accessory dealer should specialize in accessories and adopt a service policy which would gain for him the confidence of the car owner and immediately place him far ahead of any other type of dealer who just sells accessories. One way in which this can be done is to compile a prospect list of car owners who are already customers, according to make of car they drive, and keep them fully informed in regard to the accessories that are suitable for their cars. This is a real service and will be quickly appreciated.

ONE only needs to glance through the hardware, the electrical, and the blacksmithing journals to get an idea of how much competition the automobile accessory dealer is facing. Hardware stores are taking a greater and greater interest in automobile accessories. Some of them carry complete stocks. Dealers in electrical supplies are adding more and more automobile accessories to their stock. With horses becoming scarcer, the blacksmith is turning more and more to the automobile industry to make the profits that are needed to keep his business going.

In the old days these business men paid little attention to automobiles and automobile accessories. To-day they are all anxious to get their share of the profits. In each case, however, the accessories are carried as side lines.

Some dealers in other lines are able to make a success of a side line of automobile accessories on account of the reputation that the dealers have created. People have learned to rely upon all goods purchased at these stores and buy their automobile accessories there for this reason. This is especially the case in the tire business, if the town has been badly afflicted with "gyp" dealers.

Now the automobile accessory dealer has very little to fear from these hardware dealers, electrical supply houses, blacksmiths and all the rest, if he can create the right kind of good-will for himself. He has no more to fear from them than the haberdasher has to fear from the department store.

Specializing in Service

The automobile accessory dealer is a specialist and for this very reason should be able to render a far better service to the car owner than any other business man who does not specialize in accessories. It all depends upon how successfully he can gain the confidence of the car owner.

Accessory dealers, who have made the greatest successes, have not done so by cutting prices. They have not done so by watching any of their competitors. They have done so by giving the very best possible service to car owners. They have done so by helping car owners get more out of their machines.

In the past it has not been necessary for an accessory dealer to pay very much attention to building up a reputation for specialized service. There were not enough other lines of business handling accessories to make this necessary. Every car owner naturally looked upon the accessory store as the only place in town where he could buy what he wanted. Now, however, things have changed.

One day during a ride of less than a mile along a suburban business street one or more tires were seen on display, first in a grocery store, then in the office of a baggage express and household furniture-moving company, and next in the window of a grain dealer. All three of these concerns were trying their luck at selling tires. Near the grocery store was a drug store with a hardware store annex, in which were sold some automobile accessories. In practically any sort of store one is likely to find some kind of an automobile accessory for sale these days.

In most cases these stores give poor service and the purchasers of the accessories are not entirely satisfied with what they have bought. There, at present, seems to be a mania for carrying automobile accessories as side lines. It would appear that retail dealers in any line who are not making a success of their businesses have a feeling that all will go well if they just stock a few automobile accessories.

This condition of affairs makes it all the more important that the automobile accessory dealer pay more attention to service to the customers.

Service in the sense in which it is used here means making it easier for the customer to buy from him than from anyone else. This, in turn, means keeping the car owner fully informed in regard to the accessories that can be added to his car, which will result in greater economy of operation, greater comfort, or will give the car other advantages.

One way in which this can be done is to list the car owners who are already customers or prospective customers, according to the make of car that they drive. If, then, these car owners are kept fully informed in regard to the accessories that are suitable for their cars it will be a real service to them.

A man who drives a Ford is not especially interested in accessories that can be used on a Packard, but cannot be used on a Ford. The man who owns a Packard is not deeply interested in accessories that are suitable only for a Ford. If mail matter is sent to both of these owners featuring all kinds of accessories the resulting sales are pretty sure not to be so great as would be the case if the attention of the owner of the Ford was brought to that part of the stock which is of special interest to the owner of a Ford, and the attention of the Packard owner was brought to that part of the stock which is of special interest to the Packard owner.

In the first case it is not so easy to decide upon purchases as it is in the second case. Where the whole stock is featured the car owner is far more likely to overlook the things he should have for his own car than he is if nothing but the things he can use are featured. This sort of specializing pays in two ways: Less printed matter is required and the customers are impressed with the careful attention the dealer gives to their wants.

It is a fact that people spend their money where it is easiest to spend it. The reason why people have bought as many automobiles as they have is largely due to the fact that it has been made easier for one to spend his money for an automobile than to put it in a bank, buy safe securities, or to buy a house.

When a person wants to open a savings bank account he may be forced to stand in line for several minutes. In any case he will have to stand cross-questioning and perhaps admit many things about his past life and the life of his ancestors. It is not always easy to open a bank account. Sometimes it requires a person of real courage to do so. I have known it to keep timid people from opening accounts.

A person with money to invest in securities is in a serious dilemma. Only the bad ones are advertised to any great extent. He knows, if he is wise, the securities and brokers to avoid. They are usually the ones who use the largest advertising space and are always sending him very promising literature. The problem is to find the safe security and the honest broker. These are often hidden under a bushel in the dark.

The process of buying a house is so complicated and burdensome that many a one buys a home and then advises all his friends not to make the mistake that he has made.

Making it Easy for the Prospect to Buy

When it comes to buying an automobile, however, how different it is. All of the best automobiles are so well advertised that even the children in the family can talk intelligently about them. When one enters an automobile display room he is greeted with a smile. Before he leaves, in many cases, he pays over all the money he has with him, signs a few notes, and the car is his.

He also has a convenient place to put his savings—and it is all so easy. In fact, he likes it so well that in a short time he sells his car and buys another. He may buy but one house, but he would never think of being satisfied with just one car even if that car would last him a lifetime. It is too easy to spend one's money for an automobile to think of being satisfied with only one for a lifetime.

The problem of the automobile accessory dealer is to make the purchase of accessories anywhere else appear as much harder than buying from him as opening a savings bank account, making safe investments, or buying a house, is harder than buying an automobile. When this is done the dealer will rapidly acquire the goodwill and patronage of car owners.

It is just a case of making it easy for the car owner to spend his money at the dealer's, and by giving satisfactory service and satisfying all customers, making it increasingly easy for people to spend their money at the store. One way of doing this is by keeping the name of the dealer before the car owners, making it easy for car owners to remember the dealer and his place of business.

The most effective way is to suggest to all car owners the specific accessories that will prove of special service to them. In other words, make it easy for them to decide upon what to buy.

If this policy is followed for any length of time with judgment and honesty, car owners will begin to rely upon that dealer for advice. He will have built a class of goodwill that no dealer handling accessories as side lines will be able to build. He will be as far removed from the sidelines store as the specialist is from the general practitioner—and there will be about the same difference in the annual profits at the end of the year.

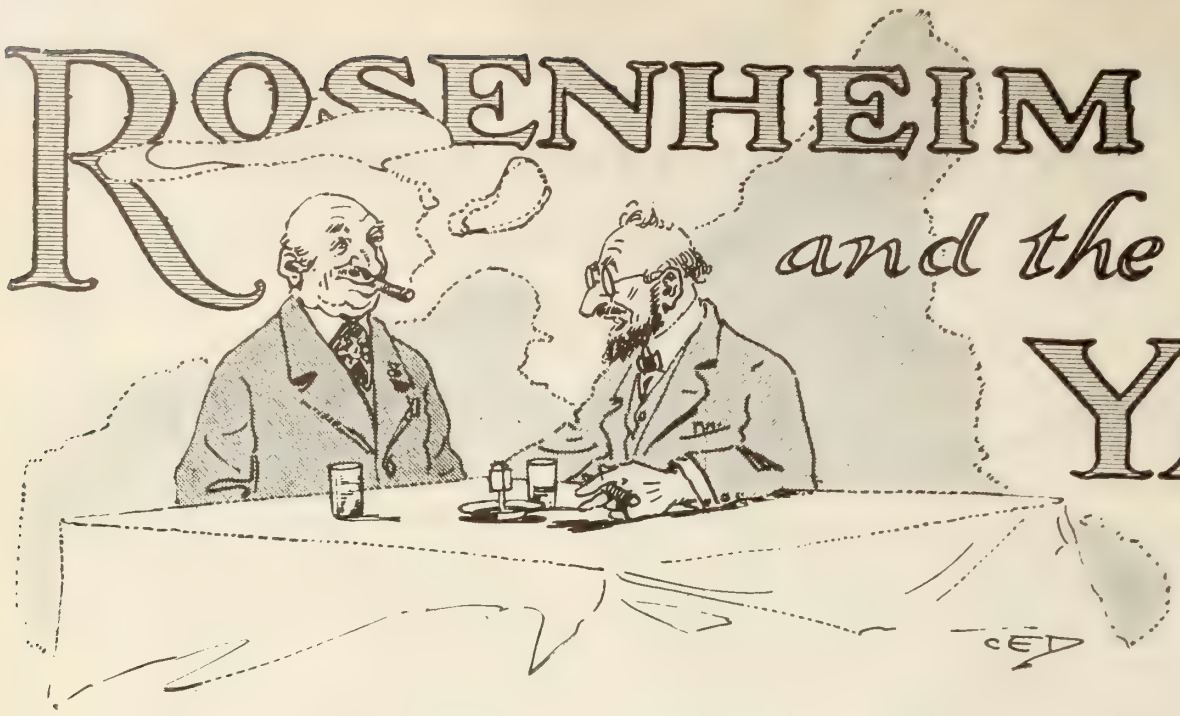
New Cadillac President

H. H. PRICE, former treasurer of General Motors Corp., has been made the president of the Cadillac Motor Car Co., to succeed R. H. Collins who has resigned to head the new Durant-Collins Motor Co.

Prices Cut

THE B. F. Goodrich Company recently announced a 20 per cent. flat decrease in prices of cord and fabric pneumatic automobile tires. The action of the Goodrich company came as a surprise to the other Akron tire concerns. It is expected that cuts will be announced shortly by most of the larger tire manufacturers.

ROSENHEIM and the Island of YAP



Pinched (with permission) from "Timken Magazine"
Sketches by Clyde E. Darr

"WHAT it is all this here newspaper talk about the Island of Yap?" asked Meyer Goldman of his friend Max Rosenheim, proprietor of the Scotch Woolen Mills, high grade men's and boys' clothing. "Why is it there is so much worry about the United States a takin' over this here Yap pop'lation when it seems like we got a oversupply already?"

"Newspapers have got to print sumpin', Meyer," replied Max, "and the farther away the subject is the more they can talk about it. This here Yap controversy has filled a mighty dull newspaper season, and it bein' a subjeck that them editors don't know nothin' about, they can write on it intelligently, not bein' hampered by facts. So they starts to yap, and people begin to argy over it like they never would over Blagovyeschensk or Makanruririruri, or some other place what is pertected by the alphabet from personal discussion."

"Well, Max, anyway it was important enough for the seckertary of state to write a mighty sharp note to the Powers about it."

"Yes, Meyer, and I bet it give the power fellers a good laugh when it arrived, special delivery. Them fellers would be settin' around playin' poker with a marked deck, and evveryboddy passin' the pot except on his own deal, when the play would be livened up by the arrival of the United States mail with the usual supply of notes. Then evver feller would count his chips and sit back in his chair to hear the 'protests' and the 'askin' for explanations,' and 'strict accountability.' I see in the statement of the expenses of the peace negotiatin' that the item for stationery was only sixteen thousand dollars, which is what I call a reasonable amount, taking into consideration the high cost of paper and the number of notes. I hear that one demmercratic senator who had to retire March 4th asked seckertary Colby to give him the celerbrated foreign note typewriter for a souvenir, and he was informed that the machine was completely wore out and entered as item 457, schedule B, in the department's expense account."

"But I don't understand yet, Max, how this here Island of Yap got to be such a important matter."

"Meyer, if you was a trusted agent of some business house what sent you out with forty or fifty thousand dollars expense money, and instead of spendin' it on legitimate things you commenced hittin' only the high places and spent it in the wildest manner possible, when you was asked for an accountin' you would prob'ly want to talk about sumpin' else. The Yap subject happened along at a nice time to take the minds of the public off of a lot of things closer to home. If we could make the League Council admit our claims, and cause Japan to be reasonable, we gain a great diplermatic victory, and the expense account ain't examined closely. We have added immensely to our world prestige, and what's a few million dollars between diplermats?"

"What I want to know, Max, is how it all started, anyway."

"Well, Meyer, it was this way. You remember some time back we had a war. It wasn't our war in the first place, but we had to join in finally to be in style, and when the job was finished they had a peace conference at a place called Versailles."

"That's in Indiana, ain't it, Max?"

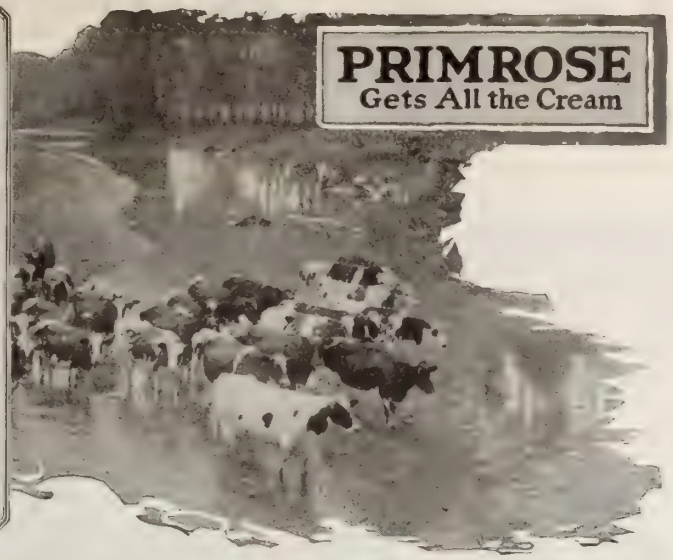
"No. This here Versailles is in France, near a town called Paris. Well, the idee was to make Germany pay the full cost of the war, which wasn't no more than right, but the general consensus of opinion in Europe was that Germany's note wasn't to be accepted unless it bore a indorsement acceptable at any bank as security, and evverboddy was broke except the United States. We had to send reppersentatives to the peace conference, so the president up and went himself, it bein' too grave a matter to leave to annyboddy else. The senate, which must confirm all peace treaties, wasn't consulted at all, and the seckertary of state, who usually looks after such matters, was readin' a continued story in a magazine and couldn't get away. So the president he gets up a party of college professers and others whose minds traveled along the same level with his and they rush off to Paris, thus givin' 'a lot of inland teachers a fine opportunity to see the world and watch an LL.D. make a royal flush. Germany didn't have much money, but she had a few boats and a lot of land scattered about over the earth, not countin' what Turkey and Austry could chip in. So Lord George, Clemenceau and the other delegates they got together with a sharp lead pencil and a Rand-McNally map of Europe as it was. 'Now,' says Lord George, 'boys, this is the way we'll fix it. Of course it is understood here and now that Clemmy gets Alsace and Lorraine for France, and it ain't counted as her share of the division, because Bismarck took it away by force, you understand, and we just hand it back before we make a general division in which France gets an equal share. And also England takes Helgoland the same way. We traded a big slice of Africa for it once, but now we want it back.

"'Now we will perseed to split up German East Africa, evverboddy come forward and pick out your lots.' And President Wilson at that time being entertained at a tea in his honor didn't get to the meeting till too late. Italy was given a lot more territory, Belgium got hers, Mesopotamia was taken care of, and the best we got was a permission for a long distance mandate over Armenia, whereby we was to furnish food, money and missionaries, but all tradin' privlages was restricted. Then Japan had to be taken care of so it was unanimously decided that all the German islands north of the equator should go to Japan, as they was near this nation and easy for the Japanese to find. At this point I guess it was Clemenceau who got up and said, 'We have to-day accomplished a great achievement for world peace, but I feel that we have been unmindful of the claims of one of our allies, the United States. The United States came to help us in our hour of need and it ain't right that she should be ignored in this here matter of splittin' the plunder. What can we do to show our gratitude? Besides, you never can tell. It may be that in future years we will be glad again to see millions of Yankee uniforms.'

"And Lord George he says, 'By Jove, old top, you're jolly well right, I forgot the United States entirely, but in spite of my nationality we can't Welsh on them. The beggars really did their part very well and should be rewarded. We will give them an obsolete submarine and two good rowboats, with oars.' 'But,' says the Italian member, 'we have divided up many large countries. Will the great United States be content not to receive any land award?'

"'That's right, too. Now France, Italy, Belgium and England cannot afford to relinquish any of their hard-won territory, besides the United States has plenty of land anyway. She don't care for large domains, all she wants is adequate recognition of her rights as an ally. Japan has been given a lot of

(Continued on page 29)



International Agents—

Make this a Primrose Year

The satisfaction which users find in Primrose Cream Separators is due to quality. These separators are made as mechanically perfect and efficient as it is possible to make a separator. They are products of a company backed by ninety years of manufacturing experience, whose reputation as makers of dependable farm equipment is world-wide.

The Primrose is the only separator with two wide-open cream outlets. The regulating screw is in the skim milk outlet, where adjustment is easy. Instead of restricting the small volume of cream, the large volume of skim milk is regulated.

Primrose separators get all the cream. Capacities range from 350 to 850 pounds of milk per hour. Direct power drive and electric motor drive equipment are available.

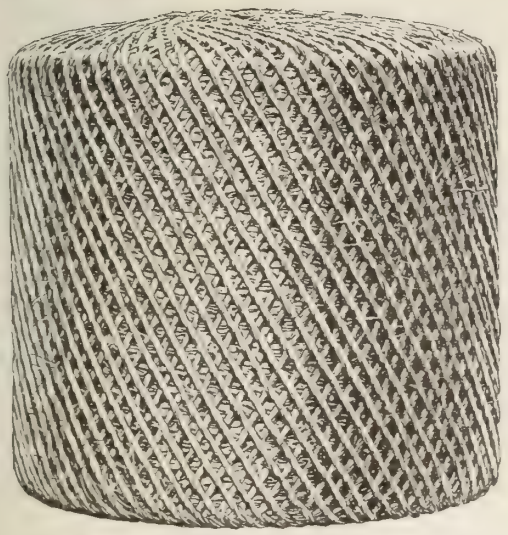
Factors like these make Primrose sales for the International agents. It is the proper time for redoubling effort on sales. Cash in on dairying prosperity and Primrose value. Arrange your prospect lists and call on the co-operation of the branch house.

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD
HAMILTON CANADA

Eastern Branches—Hamilton, London, Ottawa, Ont.; Montreal, Quebec, Que.; St. John, N.B.

Western Branches—Brandon, Winnipeg, Man.; Calgary, Edmonton, Lethbridge, Alta.; Estevan, N. Battleford, Regina, Saskatoon, Yorkton, Sask.

Saves Time When Time is Money



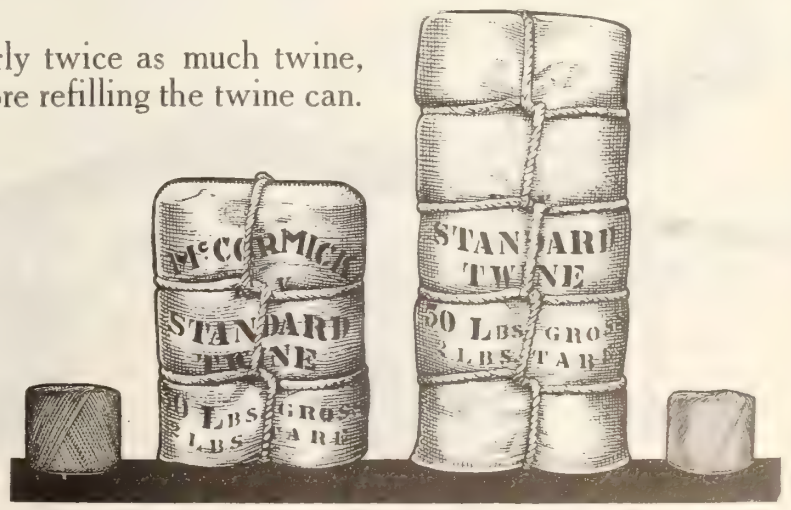
THE NEW BIG BALL

is now offered to the Canadian trade exclusively under the well-known names

McCormick — Deering — International

Six balls to the bale instead of ten means a big saving in storage room to a dealer. Compare the old and new at the bottom of this advertisement. You can figure from this the many more bales that can be stowed away in a given space.

Each ball contains nearly twice as much twine, which means that the farmer can go nearly twice as far before refilling the twine can. This saving in time means so much at harvest that the farmer will demand the new twine. Get ready to supply the demand by putting in your stock now. Write us to-day or see the blockman.



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Two New Tractor Harrows and a New Truck

New Rock Island Tractor Disk Harrow

THE Rock Island Plow Company recently placed on the market a new tractor disk harrow known as No. 37.

One of the important features of the No. 37 is the fact that all three levers are placed on the extreme front section, so they can be handled by the tractor operator. The doing away with a second man to operate the disks, or stopping the tractor so the operator can angle the disks, the makers say, is an important feature.

To farmers, they claim, the most interesting advantage of the one-man construction is that much more disking can be done than with the ordinary tractor disk, due to the fact that the tractor operator has complete control of the disk without stopping the tractor. It means that one man can do more disking than two men and twelve horses with horse-drawn disks.

The center lever controls the right and left sections of the front harrow, while the levers on the right and left side control the right and left sections of the rear harrow. It is absolutely necessary under certain conditions to be able to adjust the angle of the rear harrow less than the angle of the front harrow. This, it is claimed, can be done instantly with the No. 37.

The rear frame runs forward, over the top of the front frame, and is connected to the draw-bar of the tractor. The frame of the front harrow is pivoted both laterally and vertically to the rear frame. Either gang can turn sideways independently, and is also flexible vertically, allowing perfect flexibility up and down.

The centre pressure for the front harrow can be readily adjusted to meet the requirements in working over ridges or depressions in the field. The rear harrow also has an adjustment for levelling the gangs. To assure the disking of all the field the front gangs are out-throw and the rear ones in-throw. The rear disks are spaced so that they cut the ground left between the front disks.

The front frame is constructed entirely of angle steel securely riveted, while the frame for the rear harrow is built of angle and flat high carbon stock in a triangular shape. To further strengthen this construction, the rear frame is cross-braced with heavy steel bracings—these also form supports for the connecting mechanism of the rear gangs. All levers and ratchets are of steel.

The boxings are equipped with maple wood bearings boiled in oil. Each boxing has a hard oil cup placed sufficiently high to keep it out of the dirt and prevent it from working off. The wood boxings take the end thrust of the disks.

Avery Six-Cylinder Farm Truck

THE new six-cylinder motor truck put on the market recently by the Avery Company, of Peoria, Ill., is adapted both for farm and city use. It is equipped with pneumatic cord tires and has a rated speed of 1,400 r.p.m.

The motor has a 3-inch bore and 4-inch stroke. Cylinders are cast en bloc, with removable head, giving easy access to pistons and valves. The crankshaft is 1¾ inches in diameter, mounted in three large main die cast bearings. Lubrication is obtained by the force feed and splash systems. All interior parts are lubricated by the splash in the crank case.

Avery Six-Cylinder Farm Truck

A high tension ignition system, with K-W magneto equipped with an impulse starter is used.

The clutch system is of the dry multiple disc type. The clutch has 13 steel discs. The transmission is of the selective sliding gear type, with three speeds forward and one reverse; high speed is on the direct drive. A power take-off is also provided. Gear shift forks and gear shift and brake handles are drop-forged, high-grade steel.

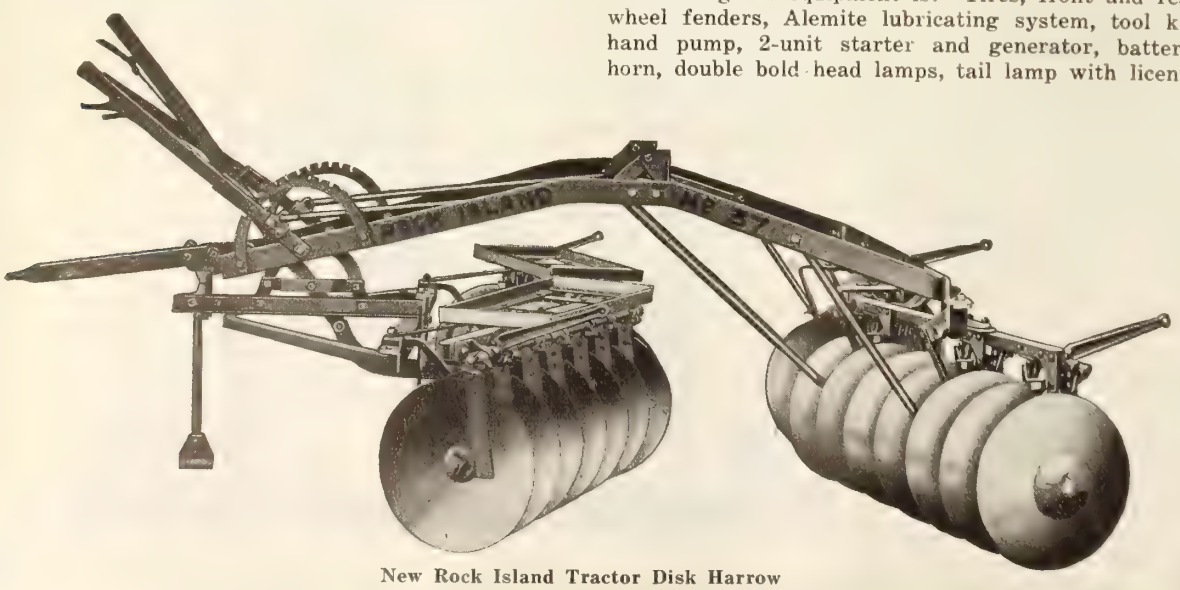
The Hotchkiss type drive, which permits the elimination of radius rods, torque arms, etc., is used. For the rear axle a Torbensen internal gear drive is used. It consists of a solid drop-forged I-beam member for carrying the load, and an independent power transmitting mechanism for driving the truck. The front axle is of the inverted Lemonine type, and carries cast steel torsion brackets, bolted to pressed steel torsion arms, which in turn are riveted to a drop-forged steel torsion ball fastened to the bell of the housing.

The frame is constructed of a 5-inch channel section, with 2-inch flange. It has three cross members and bumper in front.

Artillery type wood wheels, with roller bearings, both front and rear, and fitted with demountable rims and 34 x 5-inch all-weather tread pneumatic cord tires, are used. The rear wheels are also provided with two sets of brakes, a foot external contracting service brake and an emergency brake operated by a hand lever.

The regular equipment is: Tires, front and rear wheel fenders, Alemite lubricating system, tool kit, hand pump, 2-unit starter and generator, battery, horn, double bold head lamps, tail lamp with license bracket and dash lamp, and one extra demountable rim.

The Avery truck is sold chassis only, chassis with cab and seat, or complete with cab and a choice of three different bodies. A box body for hauling grain, for which a hog or stock rack may be furnished, and a stake body can also be provided.



New Rock Island Tractor Disk Harrow

Grand Detour Tandem Disk Harrow

THIS disk harrow is especially designed for use with tractors and is made in the shops of the J. I. Case Threshing Machine Company.

Always having the convenience of the tractor operator in mind, the makers say, a single lever has been placed within easy reach of the operator from his position on the tractor which fully controls the angling of the front and rear sections. Adjustment of the sections can be made to suit the required depth of tillage by the use of a single lever and quadrant, which being connected to the hitch clevis at the front regulates the rear sections as well. When point of draft to which the clevis is secured passes up over the pivot point, the disk sections are caused to straighten. When it passes down below the pivot point, the disk sections are angled by one movement of the lever.

The lever movement, it is claimed, may be made by the operator of the tractor, either angling or straightening the disks while the tractor is under headway, thus enabling the operator to quickly straighten the sections while passing over especially sandy or unusually wet spots in the field, thereby preventing stalling of the tractor.

The pull on the rear sections of the Grand Detour tandem disk harrow is in line with the pull on the front sections, which is accomplished, the makers say, by a pair of draw bars, designed so that in turning there is no confliction between the front and rear sections at any point, while at the same time the rear sections are kept in proper relation to the front and the pivoting of the rear section and unevenness of cut are thereby avoided.

The construction permits of oscillation of each section, making each section thereby, to a degree, independent in action. Bearings on the front sections are made of hard maple, well seasoned and oiled. On the rear sections ball bearings are used. The disk harrow is provided with scrapers on all sections. Two weight boxes on the front section and one weight box on the rear section, together with scrapers, tractor hitch and round blades both front and rear, are standard equipment. The machine is furnished with 16-inch and 18-inch blades in the following widths: 6 feet—24 blades; 7 feet—28 blades; 8 feet—32 blades; 9 feet—36 blades, and 10 feet—40 blades.

Haying Time Not Far Off

Many farmers must buy hay tools---
Be ready for the demand

Frost and Wood Mowers

A satisfactory, serviceable Mower must be able to cut the crop under any condition the farmer wants to harvest it. Weather conditions are not always ideal, nor is the crop always a normal one.

The Frost & Wood Mower has strength to stand up to the roughest field conditions and the heaviest crops. It will cut equally well the lightest yield. Smooth running Roller Bearings are used at every wearing point. They insure light draft and long life to all parts. No heavy repair bills with this Mower.

Cutter bar is made of finest quality steel. It is tilted, raised or lowered by convenient foot and hand levers. Its accurately fitted gears make it capable of commencing cutting the moment the horses start.

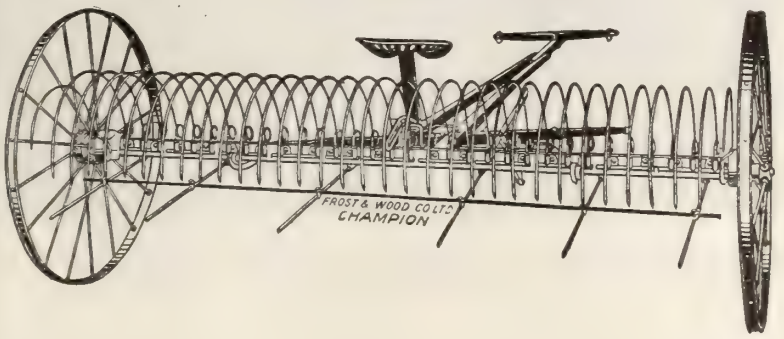
Built in 4′ 6″, 5′, 6′ and 7′ sizes.

Order Early

We can give you better service and you can more easily handle your end of the transaction when you get your orders in early. A little extra effort now will surely mean better business for you. And find out as far as possible what repairs are wanted in your territory. Get in touch with your customers and impress upon them the importance of letting you know what repairs they will require. It will save time and money later on.

THESE Mowers and Rakes have been giving fine service in every Province of Canada for many years. They have a splendid reputation because they are exactly suited to the field conditions encountered and are built of the highest grades of material.

Some farmers will patch up old machines this year, but many others must buy new equipment or lose a good part of their hay crop. To be sure of giving them the service they will look for, get your orders for Frost & Wood Mowers, Rakes and Hay Loaders in early.



Frost & Wood Rakes

Frost & Wood Steel Rakes are good for a lifetime. There is a size and style in the line to enable you to meet every demand.

All frames are securely riveted and firmly braced. They won't work loose and fall apart. Wheels are substantial and of a size that gives the Rake ample clearance even when working an exceptionally heavy crop.

Teeth are all made from a special quality of steel and are thoroughly tempered and tested before being sent out.

Our guarantee of satisfactory service goes with each machine shipped.

Hayloaders and Side Delivery Rakes

Two styles of Hayloaders—one a Cylinder and the other a Rake Bar type; also a combined Side Delivery Rake and Tedder round out our line of Haying Tools.

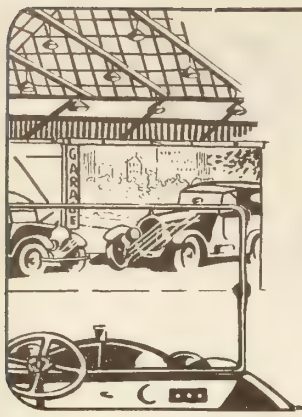
Ask the nearest office listed below for fuller information and literature on these lines. You can increase your business very materially by a judicious use of the folders, booklets and catalogs we are prepared to supply

A Frost & Wood-Cockshutt contract gives you a full line of implements, machinery and equipment for every season of the year. It's a good line to push.

The Frost & Wood Co.
LIMITED
Smiths Falls, Ont.
Montreal, Que. **St. John, N. B.**

Sold in Western Ontario and Western Canada by

Cockshutt Plow Co.
LIMITED
Brantford, Ont.
Winnipeg, Regina, Saskatoon, Calgary Edmonton



SHOP NOTES FOR THE GARAGE MAN

Some Hints on the Operation of Electric Valve Grinders

By C. W. BROGAN, Black & Decker Manufacturing Co.

HERE are some points which the writer believes will be of considerable benefit to the garage trade in connection with the use of electric valve grinders generally.

The electric valve grinder is a motor driven tool and the moving parts require lubrication the same as any other piece of machinery. In addition to lubricating the motor on any portable electric tool, the brushes should be renewed before they have been worn down so low that the spring does not hold them in firm contact with the commutator. There is no brush manufactured or known which will not wear gradually from the grinding of the commutator. When the brushes become so short that they are not held in proper contact, the result is excessive sparking which will overheat the commutator to the extent of melting out the soldered terminals of the armature winding. Brushes which are old and worn down too short very often result in burnt out armatures.

Often portable electric tools, under which classification electric valve grinders come, refuse to operate satisfactorily because a machine designed and plainly marked 200 volts is used on 110-volt circuit, and often they are burned out by using a 110-volt tool on a 220-volt circuit. This is elemental, but manufacturers of electric tools frequently receive complaints due to the fact that tools are attached to a supply line for which they are not intended.

The power which operates the electric valve grinder is carried to the tool by means of a flexible cable. At the free end of this cord is an attachment plug so that it can be readily hooked up to any electric light socket. This attachment plug should be screwed firmly into the socket.

The material of which an attachment plug is composed mainly is a brittle insulating composition. A sharp blow, such as dropping the plug on a cement floor or striking it against some other hard substance, is apt to break the insulation. This should be guarded against, but when it does happen the plug should immediately be replaced by a new one to avoid dangerous short circuits.

There is no flexible electric cord manufactured for portable electric tools in which the insulation or the twisted copper strands forming the cores will not break under constant bending at a given point. Therefore, avoid lifting or carrying the electric valve grinder by the cord, and avoid grasping the cord and the handle of the tool in one hand. This will prevent the possibility of burning out the line or starting a fire which might result from a short circuit caused by the breaking of the insulation or the wires themselves.

Owing to the fact that the grinding speed is so much higher with the electric valve grinder than by hand, coarse grinding compound should not be used for ordinary valves as it is very apt to result in scores and uneven grinding. The only time when the coarse compound should be used with the electric valve grinder is in grinding tungsten steel valves. Owing also to the rapid oscillation of the grinding spindle of an electric valve grinder, no pressure should be exerted on the tool. The weight of the valve grinder itself will hold the valve against the seat with the proper pressure without applying any additional pressure. Too much pressure will result in scores and an uneven seat.

This picture illustrates the proper way to handle an electric hand grinder. After grinding one or two seconds it should be lifted slightly so as to permit the lift spring to raise the valves slightly off the seat.

Because of the high cutting speed of the electric valve grinder, the valves should be left in grinding contact with the seat usually no more than one or two seconds at a time. After grinding one or two seconds it should be lifted slightly so as to permit the lift spring to raise the valves slightly off the seat. Turn the grinder slightly by twisting the wrist so as to change the grinding position, and then drop the valve on the seat for one or two seconds more. After this operation has been repeated three or four times the valves should be inspected to see what has been accomplished, as the tendency is to overdo the job owing to the operator forgetting that the electric valve grinder does the work about ten times as fast as the old hand method; which means that every operation in connection with the grinding job must be performed in one-tenth the time consumed when grinding by hand.

Make sure that the slot of the holes in the valve head is scraped perfectly free from carbon before attempting to grind. After this is done there is no tendency on the part of the bit on the valve grinder shaft to jump out of the slot or holes unless the tool is slanted excessively while grinding.

Remedying Ignition Trouble

THE best way to locate any electrical trouble is to begin at one end of the ignition system and make a series of tests in regular order, says American Automobile Digest. Begin first with the spark plugs under suspicion.

Moisture on the exposed part of the porcelain will often cause the engine to misfire, but this trouble on a wet day may be obviated by greasing the porcelain with vaseline. Including defective porcelain, other frequent causes of spark plug trouble may be traced to oil or particles of carbon collecting between the points and sooting of the porcelain; points out of adjustment or burned away. Ordinarily the spark plug gap should be adjusted to about the thickness of an old worn dime, depending upon the ignition system, carburetor adjustment and design of the engine.

When you have eliminated the spark plugs examine all wiring and terminal connections, making sure that all wires are tight and that the insulation isn't worn off at any place, thus causing short-circuits. Next, open the distributor case and see if there is any dirt or carbon dust. If the trouble is here it can be eliminated by wiping with a clean rag. But if it is yet undiscovered then perhaps the misfiring is caused by the contact points being pitted. These should be cleaned and adjusted very accurately according to instructions of the manufacturer. Also make sure that the tappet spring has not weakened or been broken. Remember that this spring is under a constant strain and it will bear watching.

Moisture or grease on the surface of the distributor housing will sometimes cause serious missing because the high tension current skips across the surface of this foreign matter instead of going through the regular channels.

The remedy is to wipe off the surface. The presence of moisture may be explained by the fact that it is drawn in with the air through the radiator or may condense on the surface on a damp day. The grease often collects from the oil spray thrown out by the engine.

The ignition system is a delicate assemblage, and it is up to you to keep your eye constantly upon it. Little attentions like these give you a smooth running engine and help you to eliminate expensive repairs.

Remember that the setting of the spark plug points is an important factor usually overlooked by the amateur, with the result that other parts of the electrical system are blamed when they are not at fault. Do not guess at the space, but form the habit of using a gauge.

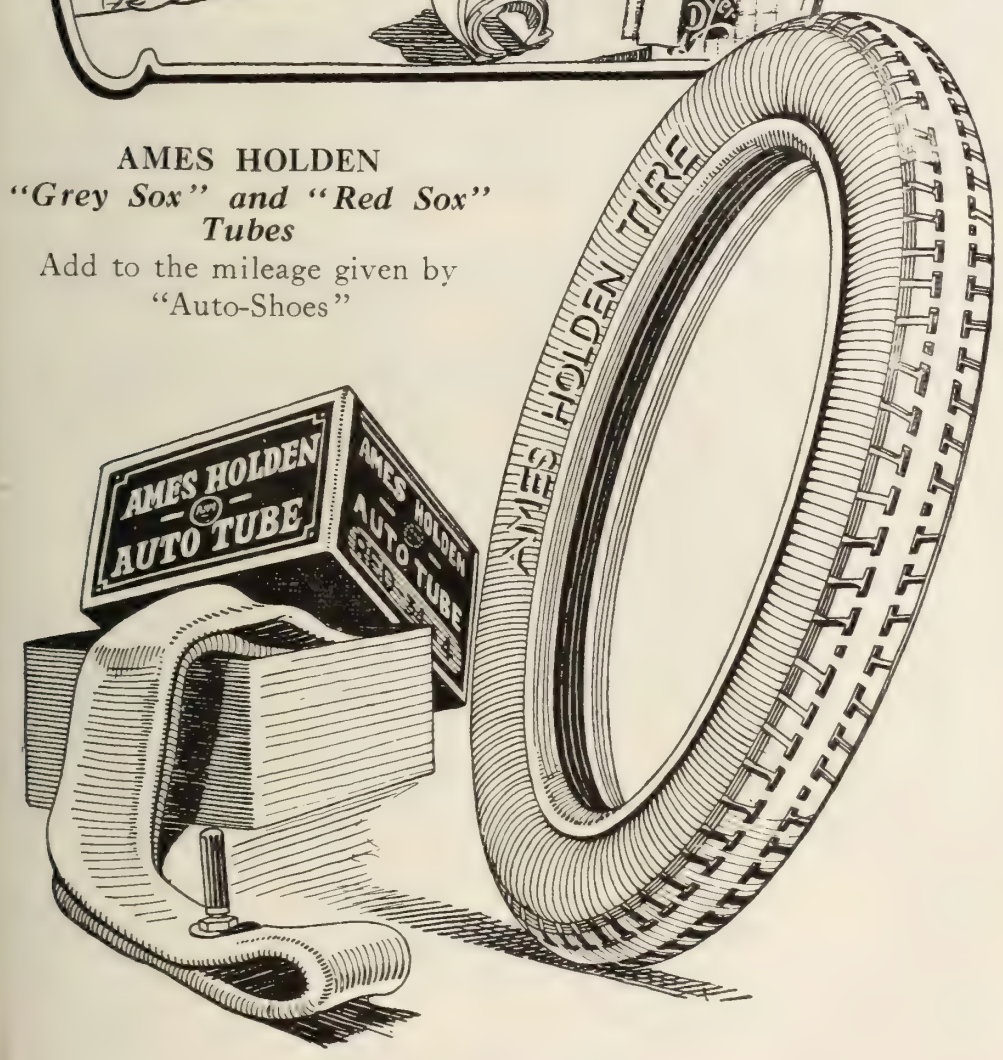
Continual misfiring in one cylinder is usually traced to poor compression or to a bad spark plug, which should be remedied immediately.

Platinum points should be examined at regular intervals to see that they are clean and free from oil. If you use too much oil in the distributor it will find its way to the points and cause an occasional weak spark or misfiring.

Make a regular inspection of the wiring for loose connections and see that the insulation is not worn at any place.

NEW AVERY DIRECTORS

THE Avery Company, Peoria, Ill., announce the election of the following directors at the recent annual meeting of the Co.: J. B. Bartholomew, R. G. Boynton, G. L. Avery, E. R. Bowen, A. Y. Barth, Major Nelson, H. A. Rumsey and George J. Jobst. At a meeting of the directors the former officers were re-elected, as follows: President, J. B. Bartholomew; vice-president, R. J. Boynton; treasurer, E. A. Cole; secretary, G. L. Avery.



AMES HOLDEN
"Grey Sox" and "Red Sox" Tubes
Add to the mileage given by "Auto-Shoes"

AHM System

A Little Light On Tire Treads

The average motorist assumes that tire treads are designed merely to look different.

Many of them probably are.

But we enlisted Science on our side when we contemplated making the Ames Holden "Auto-Shoes."

Science that analyzed running conditions —skidding tendencies—traction effects— and a host of lesser things that affect the pleasure, safety and economy of motoring

Hence the tread of the Ames Holden Auto-Shoe can be accepted as a tread that has certain clearly defined virtues that do make a difference in the running of your car.

The fact coupled with the great mileage delivered by Ames Holden "Auto-Shoes" and the guarantee that protects you against any defects in material or workmanship that may come to light anytime in the life of an Ames Holden "Auto-Shoe," suggest that you give them a tryout.

It is a guarantee without time or mileage limits which we will uphold to you without quibble or red tape.

Fit a set of Ames Holden "Auto-Shoes" and put it squarely up to us.

Ames Holden "AUTO-SHOES"

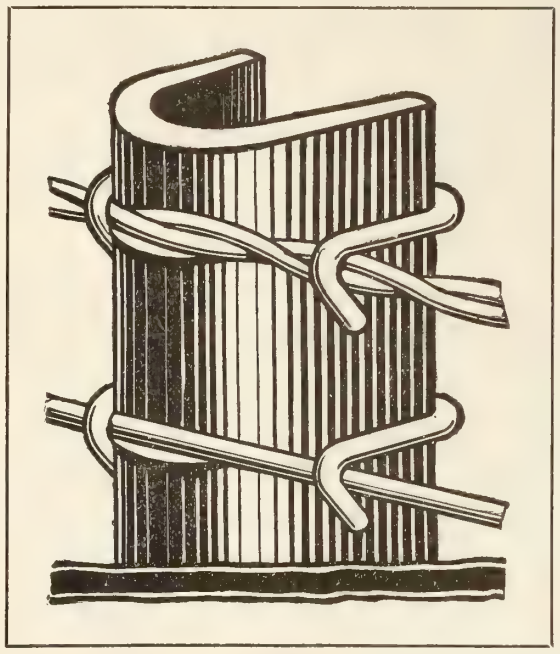
CORD AND FABRIC TIRES MADE IN ALL STANDARD SIZES

AMES HOLDEN McCREADY LIMITED

Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, London, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver.

Our Guarantee Has No Time Or Mileage Limits

Selling "Burlington" Steel Fence Posts Is Selling Satisfaction



When you sell "Burlington" Steel Fence Posts you sell two things—a real good fence post and satisfaction.

Your customers are certain to appreciate the long life, sturdy fences and ease of installation that they get with Burlington Steel Fence Posts.

They are certain to appreciate that there are no back-breaking post holes to dig, no setting nor filling in.

These "Burlington" features mean time and money saved to your customers and good will for you.

That's why it pays to sell Burlington Steel Fence Posts.

Let us send you full details.

Burlington Products, Limited

316 Sherman Avenue N.

HAMILTON - - CANADA

NEWS — OF THE TRADE FOR THE TRADE

QUEBEC

MONTREAL.—A three-story garage will be erected by Patrick Labell on Dorchester Street.

MONTREAL.—D. J. Beatty, for some time advertising manager of the Northern Electric Co., has resigned to go into partnership with G. L. MacGillivray in the G. L. MacGillivray and Co., Ltd., Montreal.

ONTARIO

BEAVERTON.—William Smith, a pioneer farm implement maker, died here recently.

TORONTO.—J. Van Sickler, Dupont Street, is planning an addition to his garage to cost $15,000.

AURORA.—Joseph Collins has purchased the implement business formerly conducted by J. Hickson.

PORT LAMBTON.—A general automobile repair shop was opened here recently by Henri La Mont, of Detroit.

WHITBY.—J. F. Pirie has purchased the Newport Carriage and Wagon Works from J. T. Newport, who is giving up business.

KITCHENER.—Reinhart and Doerr, automobile dealers, will erect in the near future a garage and service station to cost about $15,000.

KAPUSKASING.—The Spruce Falls Pulp Co. are using tractors for hauling pulpwood with marked success. Each tractor has supplanted ten teams.

CHATHAM.—A factory site has been purchased here by the Weaver Manufacturing Co. for the purpose of manufacturing garage equipment.

OAKVILLE.—The partnership between J. and A. Bell, implement dealers, has been dissolved. The business in future will be conducted by A. Bell.

OTTAWA.—L. C. Harvey, former assistant cashier at the Ottawa branch of the International Harvester Co., has been promoted to cashier. Mr. Harvey succeeds W. T. Godard who has been transferred to the Edmonton branch.

TORONTO.—Donald M. Spaidal, who was manager of the Canadian Branch of General Motors Acceptance Corp., which he opened in 1919, has been appointed Vice-president and General Manager of the said corporation at New York. Before going with General Motors, Mr. Spaidal was head of the Canada Carriage Co., Brockville, Ont.

MANITOBA

BRANDON.—Messrs. Craig and Daniel are the proprietors of a new automobile repair business here.

WINNIPEG.—The Breen Motor Co., Ltd., have secured the agency for the distribution of Ruggles motor trucks in the city and district.

TREHERNE.—The tractor and implement agency formerly conducted by the Nichols and Shepard Co., has been taken over by W. E. Staples.

WINNIPEG.—Consolidated Motors, Ltd., will erect a new garage near the Board of Trade Building on Main street to cost approximately $75,000.

MANITOU.—Edwards and Pettitt are carrying on an implement business here. They have taken on the agency for International and Cockshutt machinery.

ROLAND.—The proprietor of Tyndale's Garage has announced that henceforth business in repairs, parts, accessories and gasoline will be conducted on a strictly cash basis.

OAK RIVER.—The partnership between W. B. Young and J. R. Highet in the garage and implement business under the name of Young and Highet has been dissolved. Mr. Young will continue the implement line, and Mr. Highet will take control of the garage.

ALBERTA

VEGREVILLE.—George Rudd, proprietor of the Central Garage, has added a battery repair and service station to his automobile repair business.

EDMONTON.—W. T. Godard has been appointed cashier at the Edmonton branch of the International Harvester Co. Mr. Godard was for some time in a similar position at the company's Ottawa branch.

MACLEOD.—Dilatush and McPherson have re-opened the garage and implement business formerly conducted under the name of Virtue's Garage. They handle all automobile repairs and a full line of implements.

SASKATCHEWAN

DAVIDSON.—A vulcanizing and tire business has been opened here by Messrs. Maturskyme and Dyok.

PARRIN.—Fire of unknown origin completely destroyed the Campbell and Vance garage recently. Seventeen automobiles were burned.

MILESTONE.—The I. H. C. warehouse, which has been closed for two months, is now in operation under the managership of J. A. Tate, recently of Weyburn.

REGINA.—J. Beatty, formerly a salesman for the International Harvester Co. here, has been transferred in a similar capacity to the company's branch at Calgary.

MILESTONE.—S. Strickland has sold his interests in the garage end of his business to E. B. Sheldon. Mr. Strickland still retains the agencies for Chevrolet and McLaughlin cars.

GLEN EWEN.——Albert A. Malcolm has purchased the garage formerly operated by Whiteringham Bros. He is handling all kinds of repairs and accessories on a strictly cash basis.

MILESTONE.—The garage business formerly conducted by F. W. Nicholas has been taken over by W. Anderson and H. Hanson. The farm machinery end of the business is still retained by Mr. Nicholas.

WEYBURN.—F. H. Borgen has opened an automobile repair and garage business in connection with his auto sales department. R. A. Finch, a mechanic from the Chevrolet factory, will be in charge of the repairs.

BRITISH COLUMBIA

VANCOUVER.—An automobile repair and garage business has been opened by R. Grieve.

VERNON.—E. Hemsley has opened a tire repair and general vulcanizing business on Mission Street.

VANCOUVER.—The Giant Motor Co. have been appointed distributors for the Overland and Willys-Knight cars.

VANCOUVER.—W. H. Dayton, of Winnipeg, has purchased the Knight-Higman Motors, Ltd. It is the intention of the new owner to run the business along the most up-to-date lines. Several additions are being made to the equipment.

KELOWNA.—George H. Kerr has taken over the automobile and implement business of S. T. Elliott, Ltd. Mr. Kerr has had wide experience in the implement field, and will devote his energies to that part of the business, while Charles Gowen will be in charge of the automobile department.

Tractor Owners Mean Thresher Orders

Case Kerosene and Steam Threshing Outfits

20 x 28, 9-bar Cyl. Thresher and Case 10-18 Kero. Tractor

22 x 36, 12-bar Cyl. Thresher and Case 15-27 Kero. Tractor

26 x 46, 12-bar Cyl. Thresher and Case 15-27 or 22-40 Tractor

28 x 50, 20-bar Cyl. Thresher and Case 22-40 Kerosene or 40 H. P. Steam Tractor

32 x 54, 20-bar Cyl. Thresher and Case 22-40 Kerosene or 50 H. P. Steam Tractor

36 x 58, 20-bar Cyl. Thresher and 65 H. P. Case Steam Tractor

40 x 62, 20-bar Cyl. Thresher and 80 H. P. Case Steam Tractor

EVERY farmer in your territory who owns a tractor—it makes no difference what make, type or size—is a prospective *Case Thresher* owner. Did you ever stop to look at it that way?

The seven sizes of *Case Steel-built, Galvanized Threshers* offer Case dealers an unexcelled opportunity to capitalize on practically all tractor power that is not already employed in threshing operations.

An idle tractor represents dead capital. Show the tractor owners in your locality how to keep their tractor-invested capital active, thereby earning for them the greatest possible returns on their investments. Bring to their attention the fact that you can furnish a thresher of proved worth, in the right size to fit any tractor with a belt power rating of 16 H. P. or over.

On the other hand, don't overlook opportunities to sell *complete Case Threshing Outfits.* In almost every farm community where grain, beans and peas are grown you will find there is need for a *Case* rig—both thresher and tractor—either to replace some worn-out rig, or to increase the available threshing equipment of the community for saving the annual crop.

Make a personal canvass of your territory, if possible, and send us the names and addresses of *all tractor owners* and other thresher prospects so that we can co-operate with you in interesting these farmers in *Case Machines.*

J. I. Case Threshing Machine Company
Dept. E215 Racine, Wisconsin

CASE
TRADE MARKS REG U S PAT OFF. AND IN FOREIGN COUNTRIES.
THRESHING MACHINES

Factory Branches
Alta., Calgary—Edmonton
Sask., Regina—Saskatoon
Man., Winnipeg—Brandon
Ont., Toronto

Factory Branches
Alta., Calgary—Edmonton
Sask., Regina—Saskatoon
Man., Winnipeg—Brandon
Ont., Toronto

6" GAP—£76 Nett.—(Nett weight, with Stand, 437 lbs. Will cut any Sheet Metal up to 7 Gauge or 3/16".)
12" GAP—£80 Nett.—(Nett weight, with Stand, 494 lbs. Will cut any Sheet Metal up to 10 Gauge or 1/8".)

F.O.B. all United Kingdom ports. CASH WITH ORDER.

Immediate delivery guaranteed

WILSON'S

Patent "Nibbling" Machine

For the Rapid Cutting of Metals

In use in the workshops of leading Railway Companies, etc.

OLD WAY:—Takes 2½ hours

NEW WAY:—(WILSON'S PATENT "NIBBLER") Takes 5 minutes

Wilson's Nibbler will quickly cut or perforate to any design all kinds of Sheet Metal.

The traverse of cut is in any direction following closely the outline of a template or graph without leaving the edge compressed.

It is an indispensable and economical unit for the making of Cast Steel Gauges.

It will cut any sheet metal at an **average speed of 18 inches per minute.**

It produces like a press at nearly its speed.

The job needs **no filing after leaving the machine.**

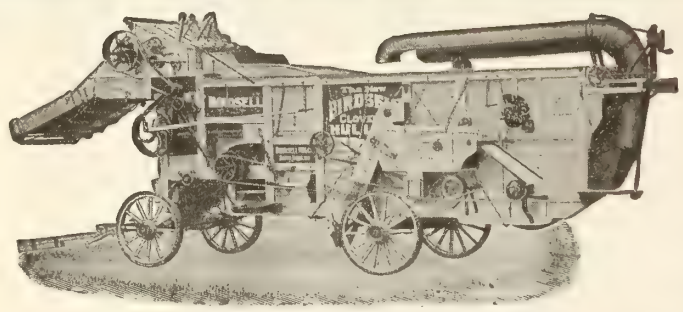
It takes very little room and requires under ½ horse power.

Sole Agents for Canada :

G. C. BADDON & PARTNER

45, Chancery Lane, London, W.C.2, England

Consulting Agricultural Engineers, General Engineers, Agricultural Machinery Specialists.
Telegrams: "Agritecnic, Holb, London." Telephone: Museum, 2018. Code: A.B.C. 5th Edition.



BIRDSELL CLOVER HULLERS

65 YEARS IN THE FIELD

In these days of high costs you must get RELIABLE GOODS for money spent or your WASTE will consume all of your profit.

There was never a time when "QUALITY" has been in such demand. In Quality and Honestly constructed goods lies the hope of industry today. Buy wisely and you will have economy.

BIRDSELL HULLERS have years of experience behind them. They are not an experiment. They are built well and will last a life-time.

They hull and clean Red Clover, Mammoth Clover, Alsike and Sweet Clover seed.

BUILT IN THREE SIZES FOR CANADA

Birdsell Manufacturing Co. Foot of George St.
Toronto, Canada

FORD COMPANY STARTS ON FULL TIME BASIS

WALLACE R. CAMPBELL on April 27 announced that the Ford Motor Company of Canada would start immediately at the main factory on full time basis. For the last few months the factory has been working only four days a week.

FORTY-CENT GASOLINE

THE Imperial Oil Company on April 27 announced that, commencing on April 28, gasoline will be sold at forty-cents a gallon throughout the Dominion. Gasoline is now five cents a gallon cheaper than it was at the beginning of the year when the motorist was paying forty-five cents. The cut applies also to naphtha and distillate.

WOULD SELL TO RUSSIA

ACCORDING to Mayor George Wedlake, vice-president and general manager of the Cockshutt Plow Company, Brantford, in commenting on the reported visit to Canada of M. Krassin, Soviet representative, Brantford agricultural implement firms would not be averse to trade with Russia, providing that financial arrangements were satisfactory.

USING TRACTOR FOR ROAD WORK

THE Board of Works, Brantford, Ont., is experimenting with a 24-h.p. tractor on road work. It is being used for hauling a grader. The experiment has revealed that the tractor is doing twice as much work in a day as two teams of horses under the system. Two men are required on the tractor, one to drive and the other to operate the grader, while three men are necessary when operating with horses. The tractor uses about $2 worth of kerosene and oil a day. The members of the Board of Works are well pleased with the test.

CAN TOUR FAR UNDER ONTARIO LICENSE

THE Ontario Department of Highways has reciprocal arrangements for the interchange of motor vehicle privileges with 41 out of the 49 United States. A list of the States into which Ontario motorists can tour under the conditions which have been agreed to between the Provincial and State Highway Departments is as follows: Alabama, Arkansas, California, Connecticut, Colorado, Delaware, District of Columbia, Florida, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, Wisconsin, Wyoming.

Following are the States with which arrangements are not in effect for the interchange of motor vehicle privileges: Alaska, Arizona, Georgia, Idaho, Mississippi, Nevada, South Carolina, Washington, New Mexico.

RUMELY PRICES REDUCED

CONCURRENTLY with the announcement of the Steel Corporation of a reduction in steel prices, the Advance-Rumely Company announces a reduction in the prices of all its products, averaging about 15 per cent. Oil-Pull tractors are reduced as follows: 12-20 reduced $300; 16-30, $380; 20-40, $575, and 30-60 reduced $685.

In announcing the reduction Finley P. Mount, president of the Advance-Rumely Company, issued the following statement:

"The reduction of steel prices cannot affect our present costs because our materials are all in our yards bought at the old prices. It does, however, establish a lower replacement cost and justifies us in immediately taking our loss on the higher priced material on hand and with this loss written off we are able to establish our costs on a lower basis.

"Our reduction is considerably greater than the reduction in steel prices, but we have in mind similar or even greater reductions made or yet to be made in other materials, besides reduction in wages already made in our shops. Moreover, we believe it sound business to get our prices down to a stable level for the remainder of this year that our customers may have confidence in buying their seasonal requirements without the fear of further decline in our prices during the year."

MARKET FOR TRACTORS IN PALESTINE

ACCORDING to a U. S. Commerce report the war has left Palestine denuded of oxen and work animals. The animal census shows that less than 80,000 head of working cattle, 4,000 mules, and a few plowing camels exist in the country. Unless the manufacturers of tractors introduce their machines into Palestine to overcome this great dearth of draft animals, the fallow lands of Palestine must remain uncultivated. The tractor, this report says, could be used to advantage in the plains and valleys all along the seacoast back of Jaffa and Haifa.

The Government has asked tractor and plow agents to give demonstrations, to establish schools for drivers, repair shops, to arrange easy term payment, and to accept plowing contracts. To encourage the importation of farm machinery the 11 per cent. ad valorem duty has been abolished.

This is an opportunity for Canadian and American manufacturers of tractors, plows, and other agricultural implements to extend the trade in these lines.

TRACTORS AT BEERSHEBA

SOME 300 spectators, including most of the notables, witnessed a tractor demonstration recently at Beersheba in Palestine. The tractor used was a 27-h.p. Case.

About 2 acres were ploughed to a depth of 7-8 inches in a very short time. The tractor ran extremely well and the work of the plough was quite satisfactory.

An endeavor was made to form a local syndicate to purchase one or more tractors. Great hopes were entertained by many prominent agriculturists that ploughing contracts would be undertaken by the agents before next year's sowing season.

I.H.C. ANNUAL REPORT

THE income account and balance sheet of the International Harvester Company covering 1920 operations makes a strong showing, and assuming that conditions have not changed materially since the first of the year, does not warrant the belief that the company will have to do some financing.

Operating income after taxes, depreciation and other charge-offs, was $16,655,353, equal to $13.84 a share on the 900,000 shares of common stock after preferred dividend requirements. Income after charge-offs in 1919 amounted to $20,011,760, but an extraordinary charge-off for war losses of $7,403,034 reduced earnings to $12,608,726, equal to $10.51 a share on the 800,000 shares of common then outstanding. In three years, 1917-1919 inclusive, there was charged out of earnings $24,800,000 for losses in Europe. Investment in Europe has been written down to the minimum.

Total sales for the year were the largest in history, amounting to $225,000,000 against $212,000,000 in 1919 and $204,000,000 in 1918. European business was good despite the handicaps of an adverse exchange situation amounting to $60,000,000, a new high record.

Quick Sales and Repeat Orders

Imperial Lubricants pay you big profits. They sell quickly because they are known to nearly every farmer in the Dominion. And they bring repeat orders because they do give such good satisfaction.

The farm market—with so many machines requiring lubrication—is almost unlimited. Farmers rely on your judgment and turn to you with confidence when buying lubricants. They know you will only supply them with the best to assure satisfaction from the implements you sell.

The Imperial Lubricant line is the most complete on the market. It includes a special grade for every machine used on the farm. Farmers who use the right grade rarely have lubrication trouble, and are able to keep operating costs down to a minimum. All this adds to the prestige of the dealer who sells Imperial Lubricants.

Imperial Lubricants are advertised in all leading farm papers year in and year out. Tie up to this advertising. Make your store "Headquarters for Lubrication." The Imperial Oil salesman will gladly furnish details regarding our profitable dealer agreement.

IMPERIAL

Lubricants

FOR ALL FARM PURPOSES

IMPERIAL POLARINE OIL
IMPERIAL POLARINE OIL HEAVY
For gasoline-burning engines—automobiles, tractors and trucks.

IMPERIAL POLARINE "A"
For motors requiring an unusually heavy oil.

IMPERIAL POLARINE KEROSENE TRACTOR OIL
IMPERIAL POLARINE KEROSENE TRACTOR OIL EXTRA HEAVY
For kerosene-burning stationary engines and tractors.

IMPERIAL PRAIRIE HARVESTER OIL
IMPERIAL GRANITE HARVESTER OIL
For open bearings of separators, binders, etc.

IMPERIAL CAPITOL CYLINDER OIL
For steam cylinder lubrication—tractors and stationary engines.

IMPERIAL GAS ENGINE OIL
For stationary or portable engines using kerosene or gasoline.

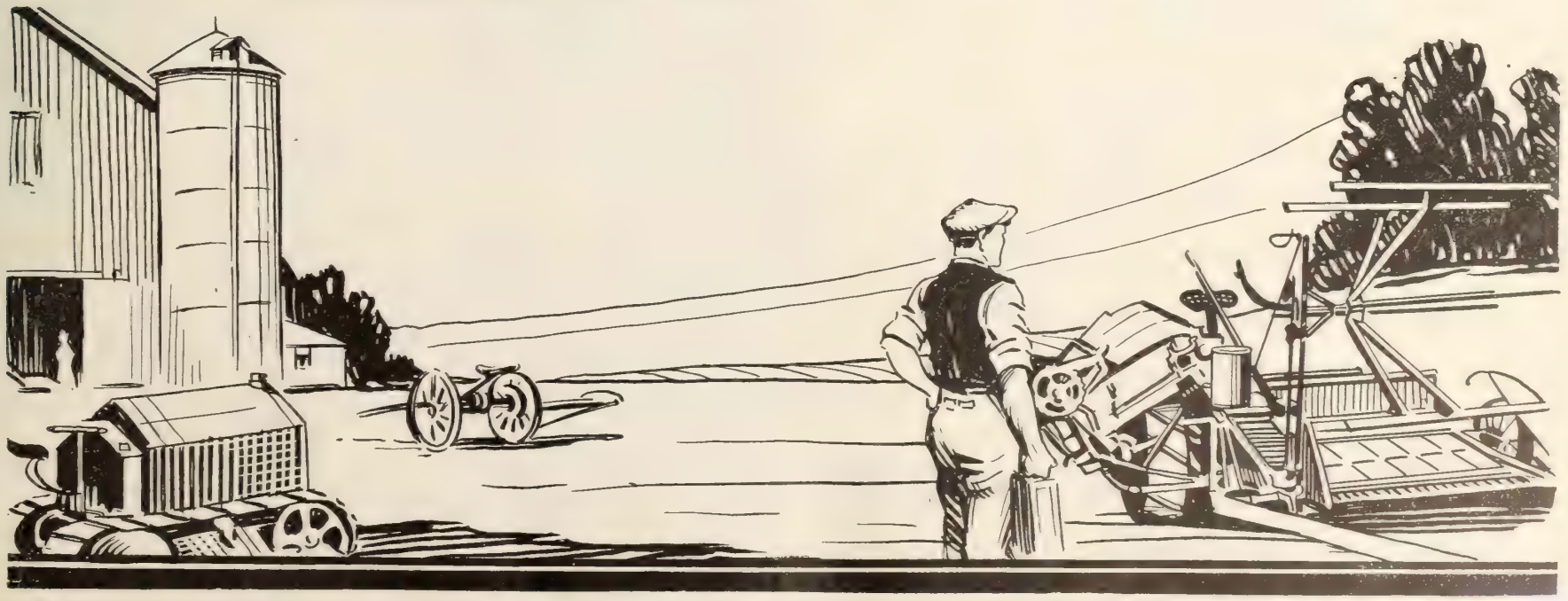
IMPERIAL POLARINE CUP GREASE
IMPERIAL THRESHER HARD OIL
For grease cup lubrication—clean, solidified oils.

The **Imperial Charts of Recommendations** indicate exactly what grade of **Imperial Polarine** will give best results from any type of tractor or automobile. Dealers should display them prominently. Write to 56 Church St., Toronto, for Charts.

IMPERIAL OIL LIMITED

Power - Heat - Light - Lubrication

Branches In All Cities



A little "Klearsight" on the inner side of the windshield

KLEARSIGHT
TRADE MARK

Foggy weather—hot "steamy" days—have no bad effect on the windshield protected with "Klearsight."

"Klearsight," applied with a damp cloth and rubbed lightly, forms a thin film or coating absolutely waterproof. Moisture from any cause cannot form on glass or metal cleaned with "Klearsight."

Puts a wonderful polish on brass and nickelled parts. Every motorist will want "Klearsight." Get in a supply to-day.

PASZNICKI BROS., LIMITED
21 Richmond St. West, Toronto

DEPENDABLE EQUIPMENT

Weaver Shop Devices
Hart Storage Batteries
Dunlop and Gutta Percha Tires and Tubes
Partridge Cord Tires
Veedol Lubricants
Raybestos Brake Lining
McKinnon Chains
Curtis Air Compressors
Klaxon Horns
Canada Vulcanizers

Immediate Delivery from Our Large Stock.

Our Policy—Full Co-operation with the Dealer.

Dealer's Prices Quoted to Legitimate Trade Only.

KEYES SUPPLY CO., LIMITED
Q. 471 OTTAWA Q. 454

SHOULD TAKE ADVICE

"BRITISH COLUMBIA, like all other countries, is going through a period of adjustment. This had to be expected sooner or later, and the surprising thing is that the slowing down process did not come sooner," said J. R. Duncan, Vulcan Iron Works, Ltd., Vancouver, B.C., in a recent interview. "I feel that we have had too much government control and the deferring of the evil day, so to speak, has made matters so much worse. I am not a pessimist, however, and believe that everything will work out for Canada's good, so rich in natural resources is the country and comparatively more highly developed mechanically than ever it was. We should take the advice of our bankers and men who have travelled in other countries in Canada's interests, and who genuinely believe in Canada's possibilities. This means aggressive missionary work to increase our export business, and the putting of our own raw materials into the finished product at the point of supply of the said raw material, making Canada's resources productive in labor and wealth from start to finish.

"Canada is financially sound, and after travelling through Europe recently, I feel that we, as a nation, have much to be grateful for. Let our optimism be that of working and watching. Delivery of materials is satisfactory and prices are gradually declining to a stage that should interest purchasers. Labor is efficient and anxious to do its part. Wages can only decline with the cost of living; volume being low we are just maintaining a nominal crew. The outlook is satisfactory and the slightest revival would mean a gratifying state of affairs for us. The stabilizing of the lumber and pulp industries would improve our position. Prices on the finished products are declining. Deflation, to my mind, is not complete and only the pressure of natural laws will bring this about. We have made valuable connections in the Orient and our outlook, from an export standpoint, is decidedly interesting.

"Speaking generally, the outlook for 1921 is by no means worse than it has been on many occasions before the war had shaken the whole fabric of business. The European situation is gradually improving. The people of the United States have elected their Government. People have not been purchasing and they must resume at an early date, which must necessarily mean work. Work means wages; fair wages mean contentment.

"Speaking specifically of British Columbia, both the Dominion and Provincial Governments have many important works to go on with, works which will become an asset not only to this province but to the Dominion."

CARR FASTENER PLANT WELL UNDER WAY

THE Canadian plant of the Carr Fastener Company at Hamilton, Ont., is now in full operation. They are making the "Lift-the-Dot" fastener for automobile curtains and also fasteners for leather goods and heavy clothing.

MONTREAL AUTO TRADE ASSOCIATION OPTIMISTIC

AT the annual meeting of the Montreal Automobile Trade Association held recently at the Windsor Hotel, there was much enthusiasm and a general feeling that business had turned the corner and was headed toward a strong and active sales period. Many suggestions for the betterment of the trade were discussed.

The recommendations of the last annual meeting that a change be made in the number of directors and method of election was considered, but it was the opinion of this year's meeting that experiences of the past year had proved it impracticable because of the difficulty of securing a quorum and because of the frequent changes in the personnel of the representation from company shareholders.

The retiring board of directors considered that it was desirable for the association to impress on the government the desirability of all vehicles being compelled to carry lights at night in the interest of public safety. The directors also recognized the efforts of Victor Levesque in making the show a decided success.

The retiring officers are as follows: J. R. Marlow, retiring president; N. J. E. Catudal, retiring treasurer, and Paul R. Hanson, retiring director.

The following officers were elected: C. S. Hoben, manager for Eastern Canada for the Ford Motor Co. of Canada, president; George Bergeron, manager of the Dominion Rubber System, Ltd., Quebec, vice-president; A. M. Jaques, vice-president and managing director of the Montreal Motor Sales, Ltd., distributor for Dodge Brothers cars for Montreal, secretary; R. G. Gilbride, general manager of the Packard Montreal Motor Co., Ltd., and vice-president of the Allied Motors, Ltd., distributor for Paige and Oldsmobile, and director of the Gray Dort Agency, Ltd., treasurer; A. E. Gadbois, vice-president and general manager of the Montreal Vehicle Motor Co., distributor of Maxwell, Chambers and National trucks; J. O. Linteau, general manager of the Legare Automobile & Supply Co., Ltd., distributor in the province of Quebec for Hudson, Essex, Nash, Franklin, Chevrolet and Republic trucks and F. J. Wolfe, Montreal, district manager of the Imperial Oil, Ltd., directors.

Adelstan Levesque, who has served capably as active secretary and who has been successful in conducting the shows, was retained as active secretary.

CHANGES NAME

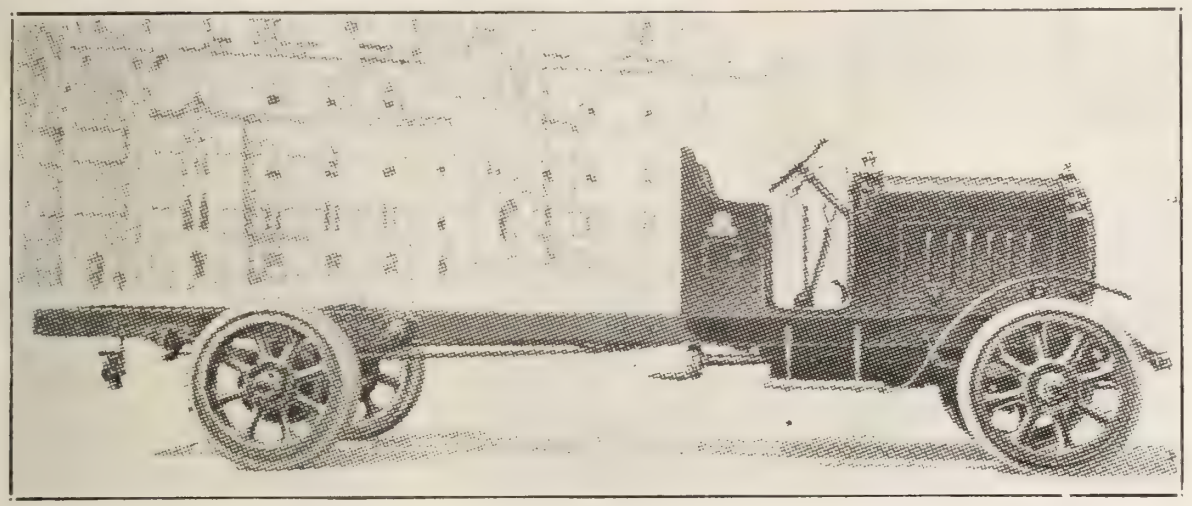
IN connection with the formation of the Hamilton Car Co., Ltd., the following announcement is made: The National Steel Car Corporation, Ltd., of Hamilton, Ont., took over the plants and effects of the National Steel Car Co., Ltd., as a going concern, and is now operating the business under the title of the National Steel Car Corporation, Ltd. To prevent confusion on account of the similarity of names, the National Steel Car Co., Ltd., has changed its corporate name to that of the Hamilton Car Co., Ltd. The Hamilton Car Co., Ltd., owns certain stock and effects pending final liquidation, but is not in the business of building railway car equipment.

BETTER TONE IN STEEL MARKET

SENTIMENT in iron and steel is more cheerful due, however, more to an improving outlook than to actual new business which remains at a low rate, says the Iron Trade Review. Expected wage reductions by the Steel Corporation, it is believed, will further clarify the situation. The demand from the automobile industry is the feature but this very fact illustrates the poor distribution of buying. Where normally this industry does not furnish more than 5 per cent. of the market, its present absorption of tonnage is several times that amount. The sluggish movement of the heavier lines works against any material expansion of general operations. Sheet conditions, which are most directly affected by automobile demand, reflect the clearest signs of betterment. In the Mahoning valley, sheet production this week is up to 43 per cent., the best record since early January. Releases are now being received at their reduced prices and enabling the Steel Corporation mills to maintain or slightly increase their operations.

The composite market average index of the Iron Trade Review this week is $43.73 compared with $43.85 last week and $$44.57 for the corresponding week a month ago.

VETERAN TRUCKS



Made with a factor of safety to withstand the hardships a Truck must endure to be profitable to its owner. Simplicity of control, accessibility to all parts, adaptability to a multitude of users, these are VETERAN Truck features.

Built in Canada in Capacities from 1 Ton Up

EASTERN CANADA MOTOR TRUCK CO., LTD.

HULL, QUE.

POPULARITY AND SALES GO HAND IN HAND

For seventy-four years the performance of Massey-Harris machines has proved that they are better than good machines, and farmers everywhere know that they can depend upon an implement bearing the name "Massey-Harris." In addition the owners of "Massey-Harris" machines know that if a repair part is needed they can get it easily and quickly.

Quality and service mean ready sales for the agent who handles this line.

Now is the time to get around after orders for hay tools and it is also well to remember that the Massey-Harris line is complete, as shown in the following list:

Grain Binders
Reapers
Corn Harvesters
Mowers
Rakes
Side Delivery Rakes
Tedders
Hay Loaders
Cultivators
Seeders
Hoe Drills
Shoe Drills
Disc Drills
Fertilizer Drills
Fertilizer Sowers
Disc Harrows
Drag Harrows
Harrow Carts
Feed Cutters
Pulpers
Grinders
Ensilage Cutters
Manure Spreaders
Cream Separators
Plows, Scufflers
Land Rollers
Packers
Wagons
Sleighs
Gasoline Engines
Saw Outfits
Tractors

MASSEY-HARRIS COMPANY, LIMITED

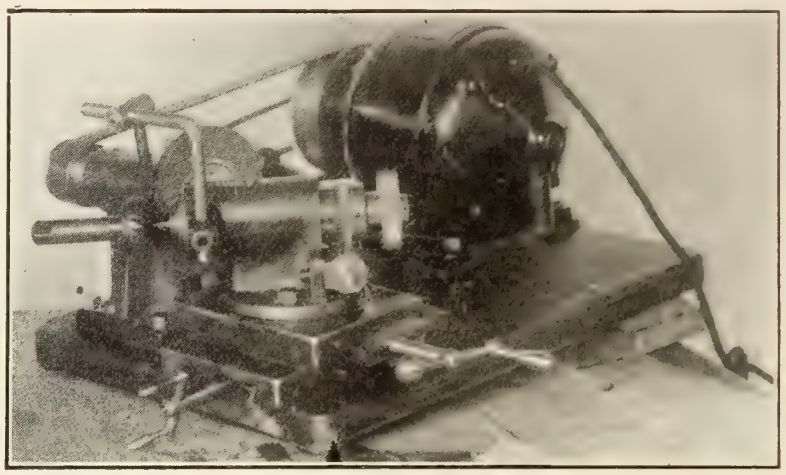
Established 1847 - HEAD OFFICE - TORONTO, ONT.

Automotive Accessories *and* Implement Equipment

SPARE TIRE CARRIERS

THESE carriers, which are known as 2-R-3 tire carriers, enable the motorist to carry all the extra tires desired. They are intended to supplement the regular tire carrier already installed and are so designed that they fit over any make of carrier. The 2-R-3 carrier rests on, and is supported by tire No. 1, which in turn will support tire No. 2, and No. 2 will support another carrier for tire No. 3, etc. Thus, it is claimed, as many tires as desired may be carried, all strapped to tire No. 1. They are made in two models to fit all sizes of tires.

The construction of these carriers is such that they may be disassembled and packed away in comparatively small space. The cradle sections fit about one-quarter of the circumference of tires. The wide suspension bar is provided with a series of holes to receive the two narrower bars, thus allowing adjustment for any size tires. Made by the International Stamping Co.



Portable Repair Shop Unit

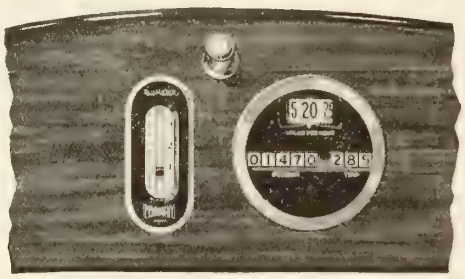
PORTABLE REPAIR SHOP UNIT

THE Franklin Universal grinder and portable repair shop unit is designed to perform a number of operations in the automobile repair shop, chief among which are valve grinding and grinding reseating cutters.

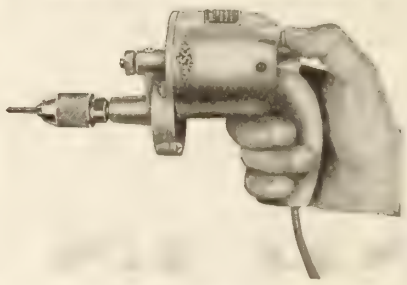
The machine consists of a flat base with a 1-4 h.p. motor attached. A grinding wheel running in a bronze bearing is rigidly fastened to the base. The grinding wheel is driven by means of a long flat belt. A swiveled head fitted with draw-back chucks to hold the valves or cutter pilots is mounted on the compound slides. These slides are operated by feed screws for moving work up to and across the face of the wheel. The spindle in the swivel head is driven by a worm and worm wheel by means of a flexible shaft arrangement. The slides are scraped in and fitted with adjustable gibs to take up for wear.

In grinding valves the valve is placed in the chuck and held fast by tightening with the draw-back sleeve, the power is then applied and the work fed up to the wheel slowly with the lower feed screw, and by using the upper or right-hand screw feed the work is moved across the face of the wheel. To obtain a mirror-smooth finish the work is fed across the wheel slowly, using the right-hand screw only. For grinding reseating cutters the pilot or cutter shank is placed in the chuck and the draw-back sleeve tightened. The tooth indexing arrangement is then placed in the proper place and after disengaging the worm the tooth of the cutter is fed across the wheel and indexed for each successive tooth. When sharpening the cutters the pilot of the cutter is held in the same manner in the same chuck as the valve stem.

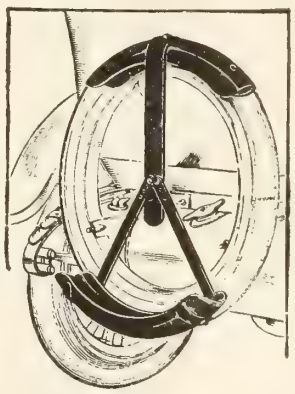
A flexible shaft attachment has been added to this equipment for reaching an out-of-the-way corner to grind off spots that are hard to file, etc. Other rotating tools can be used, such as drills, reamers, etc., by attaching a suitable holder. The makers are the Franklin Machine and Tool Company.



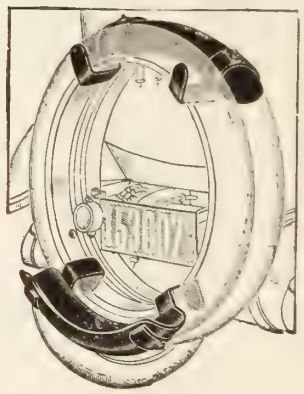
Flometer



The One-Hand-y Drill

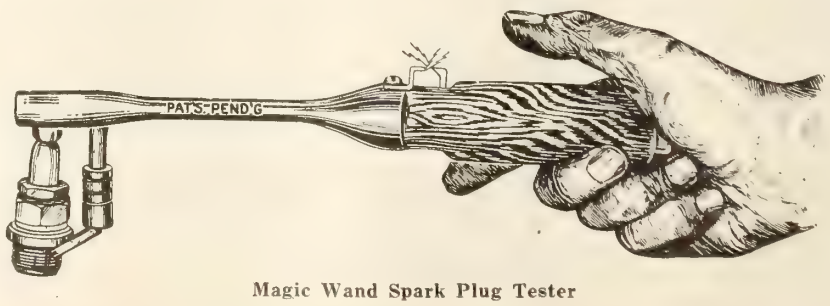


Model Y



Model S

Spare Tire Carriers



Magic Wand Spark Plug Tester

MAGIC WAND SPARK PLUG TESTER

THE Magic Mfg. Co. recently placed on the market the Magic Wand spark plug tester, which they claim will reveal instantly spark plugs tha miss fire from any cause. It is also claimed that the intensity of the spark may be quickly and accurately measured. The spark is drawn out six inches from the plug at an adjustable gap, which, the makers claim, prevents erosion of the plug terminals by electrolysis. The tester can also be used to test the ignition circuit wires. It is made of the best materials and has no parts requiring replacing.

FLOMETER

ANOTHER refinement of the automobile which was brought about through the obvious necessity of having some kind of instrument that would tell the owner or service man when the car was functioning properly is the Penberthy flometer.

This device is located on the instrument board and tells the actual amount of gasoline that is being consumed at any moment of reading in gallons per hour. In the same way the miles per hour are shown by the speedometer, and when used in conjunction with the flometer, the consumption of gasoline in miles per gallon is known accurately at the time of reading. By the use of this device anyone can adjust a carburetor, it is claimed, to the most efficient setting by simply screwing the adjustment one way or another until the speedometer shows the maximum number of miles and the flometer registers the minimum flow of gas.

This instrument is attractively finished in black and nickel; is inexpensive; and, being small, can be placed on any car. Made by the Penberthy Injector Co.

THE ONE-HAND-Y DRILL

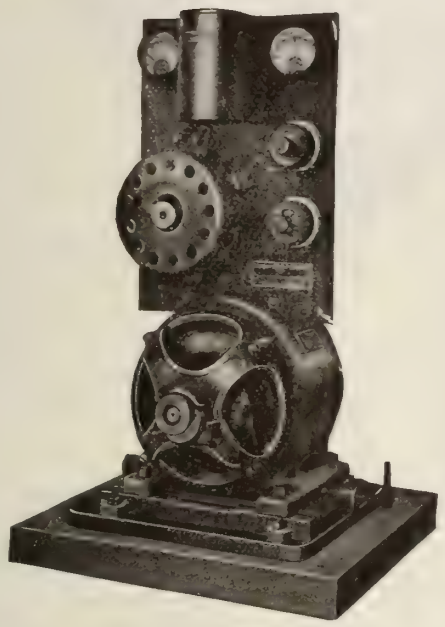
THIS drill is designed for all light work and is especially useful for drilling holes for oil, cotter-pins, name-plates, or any small hole in metal; boring holes for wood screws in cabinet work, dowel-pin holes in window sash, applying hardware in all its ramifications. It is built strong and substantial and stands rough handling.

The housing is made of aluminum. The pistol grip is designed to fit the hand. The grip is on a direct line with the chuck and gives a straight line pressure on the drill bit, eliminating the danger of side strain. Switch button operated by the thumb controls the power. The motor cannot run idle when not in use.

The chuck spindle bronze gear is driven from a spiral-cut steel pinion, integral with the ground and hardened armature shaft. The spindle has a large bronze bearing, and the thrust bearing is a loose steel ball in bronze bushings. A knurled nut on the extended end of the armature shaft makes a quick and simple method of holding the chuck spindle stationary while removing the drill-bit. The drill is regularly equipped with 6 ft. of cord, with separable plug and a three-jaw chuck, taking ¼-inch drill-bits.

It is made by Knight Engineering and Sales Co.

Northern Electric
POWER AND LIGHT

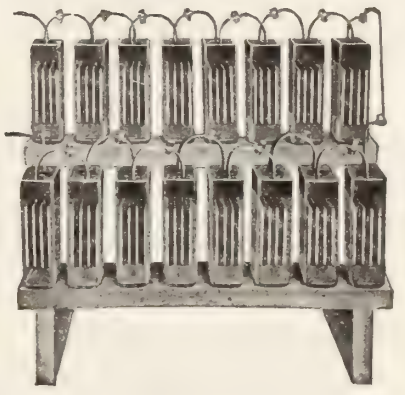


Belt connected plant—operates from any good engine

A Complete Line of Electric Farm Plants and Accessories

Belt Connected Plants
Direct Connected Plants
Water Systems
Portable Motors
Appliances
Wires and Supplies

This line will make you the Electrical Headquarters of your district.

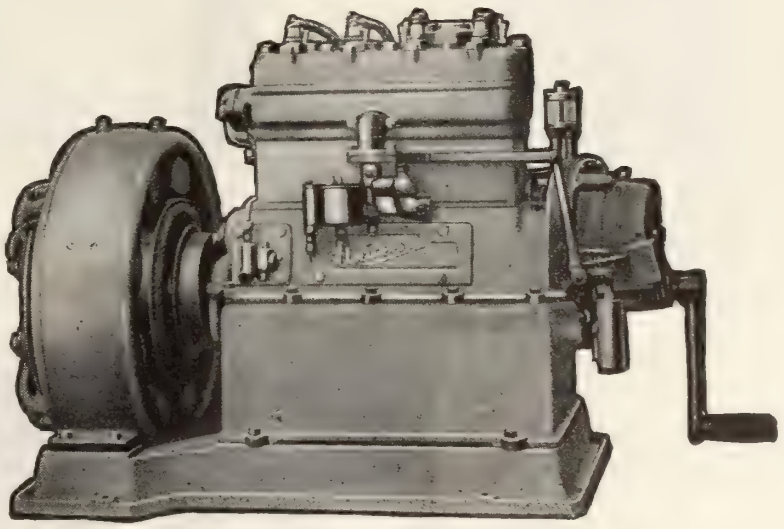


Titan Storage Battery, 16 cells supplied with each plant. 120 or 216 Ampere Hours.

With the Plant you can usually sell a Water System, while limitless follow-up sales possibilities are yours with Utility Motors, Vacuum Cleaners, Washing Machines, Dishwashers, Irons, Toasters, Percolators, Wiring Devices of all kinds, Fixtures, etc.

Write Our Nearest House Now

Be the Farm Electrifier of Your District



110 Volt D. C. Universal Plant

For installations of 4KW, 8KW or 12KW

Northern Electric Company
LIMITED

Montreal Quebec Toronto Windsor Regina Edmonton
Halifax Ottawa Hamilton London Winnipeg Calgary Vancouver

ADJUSTABLE TAP WRENCH

THIS is a handy wrench which is adjustable for taps, drills, reamers and all tools of a similar nature used in garages and machine shops. They are made of solid bar steel, the makers say, and are accurately machined, with a ground and polished finish.

HERBRAND SOCKET WRENCH SET

THE Herbrand auto socket wrench set includes a complete assortment of auto wrenches—sockets to fit every sized nut and braces, handles and extensions that enable a car owner, it is claimed, to reach any nut on his machine. Complete sets consist of 13 pieces, including brace, sockets, T and L handles, 6-inch and 10-inch extensions and an adapter.

AUTO JACK

A NEW auto jack has been placed on the market by the Millers Falls Company. The makers claim that the worm gear principle which it employs not only eliminates friction, but pawls, springs and ratchets as well. There are no intricate parts to get out of order.

A broad rectangular base insures a good footing, it is claimed, on all surfaces. The jack has a lifting capacity of two tons. As the handle is slipped into place it automatically locks. A light pressure of the locking pin allows it to slip off easily. The body of the handle is of steel tubing. The telescopic rod is 3-8-inch hexagon cold rolled steel. It folds to a minimum of 18 inches and extends to 36 inches.

KESTER ACID-CORE WIRE SOLDER

THIS is a solder that combines solder and flux. As shown by the illustration, the flux is contained in little pockets in the hollow wire of the solder. As the solder melts the flux is released and flows out on the part to be soldered.

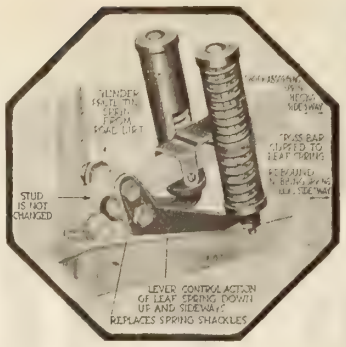
The elimination of the separate fluxing operation, it is claimed, saves one-half of the workman's time. Perfect fluxing is assured. The solder and flux, the makers say, flow out on the job together in just the right proportions to assure a perfect weld. Hard-to-get-at places almost inaccessible any other way, are easily and quickly reached. It is made in two forms—acid-core wire solder for general and automotive work for soldering all metals except aluminum, and rosin-core wire solder for delicate electrical work. It is manufactured by the Chicago Solder Co.

UNIVERSAL SHOCK ABSORBER

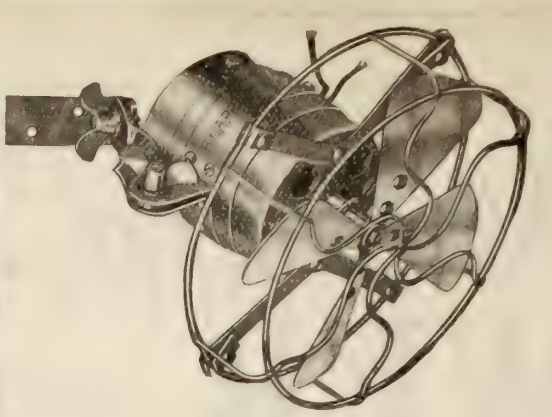
THESE shock absorbers are intended for Ford cars and are made in three types, No. 1 for sedan and commercial bodies; No. 2 for touring and coupe bodies, and No. 3 for roadster bodies.

They are built on the lever principle There are four oil-tempered coil springs in each absorber, one in the upper part and one in the lower part of each tube. Their action is controlled by a cross bar, so that the four springs act together in pairs. The makers say the upper pair of springs absorb the shock. Each time the wheels hit a bump or drop into a hole the shock, they claim, is absorbed without a jar or jolt by this pair of springs. Then on the rebound that follows each shock the lower pair of springs come into action and stop it. The makers also claim that all side-sway is eliminated and steering made easy on rough and difficult roads.

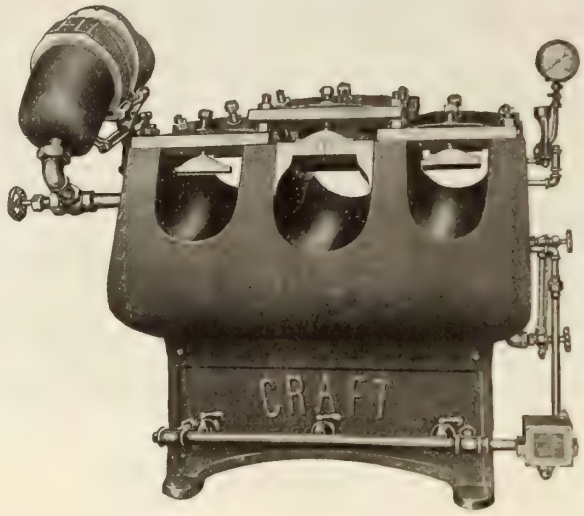
They are made of steel and each spring is tested. The tubes which encase the springs protect them from dirt, oil, etc. They are easily installed and do not in any way change the construction of the car. Made by the Universal Sales Co.



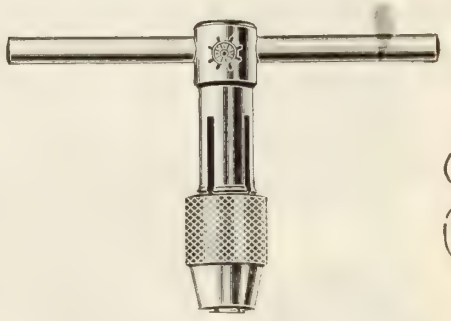
Universal Shock Absorber



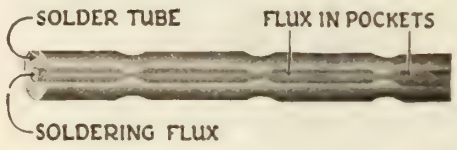
Knapp Limo-Sedan Fan



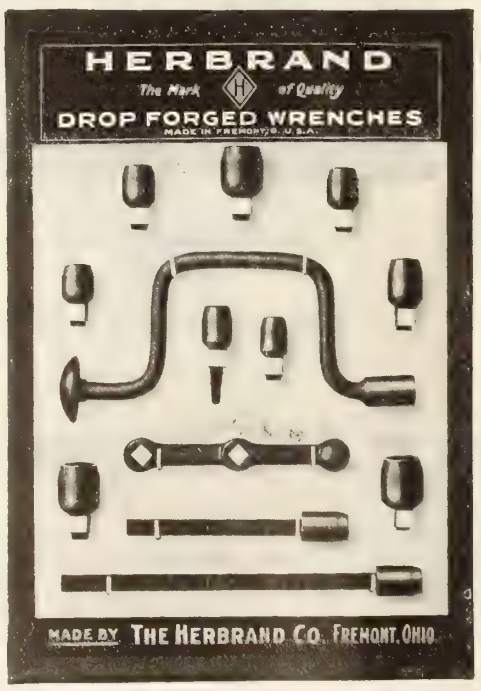
Woodcraft Truck Tire Mold, Model 3-3



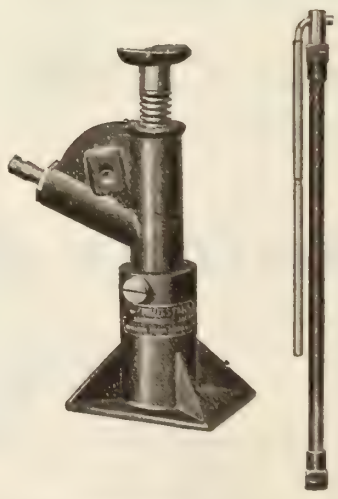
Adjustable Tap Wrench



Kester Acid-Core Wire Solder



Herbrand Socket Wrench Set



Auto Jack

KNAPP LIMO-SEDAN FAN

THIS fan is intended for use in closed cars. It is connected to the storage battery by means of a few feet of cord with a control switch placed at a convenient point in the line. The bracket has a double joint with rigid set pins and several points of adjustment for tilting the fan to any angle. The makers say it is easily fastened to the ceiling or any other part of the tonneau. The makers also claim that the cost of maintaining the fan is practically nothing. The current consumption while running is 1 1-2 amperes. It is made by the Knapp Electric and Novelty Co.

TIRE JACK

AS a tool the Electric Specialty tire jack is a small, flat, compact device. The hooks which lift the tire are simply slipped under the tire and the small hook is dropped through the hole in the lever. The leverage is such that even with the heaviest tire only a slight effort is required to lift the tire so that the valve stem clears the felloe. The tire jack is adjustable for any size of wheel by making the rope sling of proper length. After the tire is off the lever is disengaged from the hook and the tire rolled out of the way. The fresh tire is rolled into position, and the hooks are slipped under it. With the tire supported by the tire jack the makers claim that perfect ease of control is obtained and there is no difficulty about getting the valve stem in place.

FAULTLESS AIR COMPRESSOR

THE Faultless air compressor is a single cylinder, single acting, air cooled machine. It is equipped with extra heavy tight and loose pulleys on one side, and turned and balanced fly-wheel on the other, ensuring, the makers claim, a steady running and well balanced machine. The base, cylinder, piston, fly-wheel and pulleys are made of close-grained semi-steel. The connecting rod is of malleable I-beam section. The valves are carried in cages and can be quickly removed without taking off the head by removing the cap screws. The intake valve is of the steel disc poppet type, turned from solid stock.

A high pressure of 200 lbs. per square inch can be developed with safety and a constant pressure of 150 lbs. can be maintained without overheating. It is manufactured by the Vulcan Mfg. Co.

NEW UNDERSLUNG DRAWBAR FOR CLETRACS

A NEW type of drawbar for the Cletrac tractor has been pefected by the Cleveland Tractor Co. It is attached to the main frame through a cross-member back of the engine flywheel and extends back, oscillating over present Cletrac drawbar.

The makers claim that the new drawbar gives a steadier pull and smoother turning. To attach it to tractors already in operation, drill the first hole for the cross-member 45 5-8-in. back from the front edge of the front cross-member. The gussett plate of the cross-member faces the rear. The remaining holes for attaching the cross-member are drilled to correspond with the holes in the cross-member. Bolts are furnished, but the members may be riveted.

The U-shaped carrier slips over the present drawbar, and the new drawbar is extended through this carrier. The coil spring is pinned and cotter-keyed to the cross-member. This spring affords flexibility between the engine and the load. The point under the tractor where the load is taken is low down and placed so the load is transferred uniformly to the tracks, increasing traction.

The HART OF YOUR CAR

Build Your Battery Business on the

HART STORAGE BATTERY

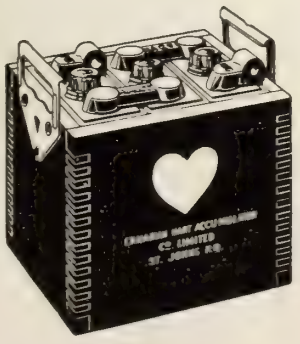
The HART STORAGE BATTERY is backed by 30 years' experience which is built into it—guaranteed against electrical, mechanical and chemical defects.

Service Stations and Dealers who sell the HART STORAGE BATTERY will find at the end of the year that their profits are not all eaten up in service due to structural or chemical defects.

HART STORAGE BATTERIES STAY SOLD

One Service Station in an Ontario town reports that of 68 batteries sold last year, only **ONE** came back for a very minor repair.

If there is not a HART Service Station near you, write us for our proposition.



Order a battery and see our Locknut Post Pole Seal.

HART BATTERY COMPANY, LIMITED

Sales Office, Drummond Building, Montreal

Works at St. Johns, Quebec

APEX ENGINE TONGS

THESE tongs are designed for hoisting Ford, Overland Four, Chevrolet and Maxwell engines from the chassis. A spring is provided to prevent their slipping off the engine. The makers say it is impossible for the hold of the tongs to loosen while the weight of the engine is on them as the pull of the load draws the points closer together. They are made of malleable iron. The makers are the Apex Mfg. Co.

PORTABLE POWER PLANT

THE rapid advancement shown by farmers in their adoption of the modern ideas of farming with power machinery is given as the reason for Avery Company entering a four-cylinder portable power unit into the field.

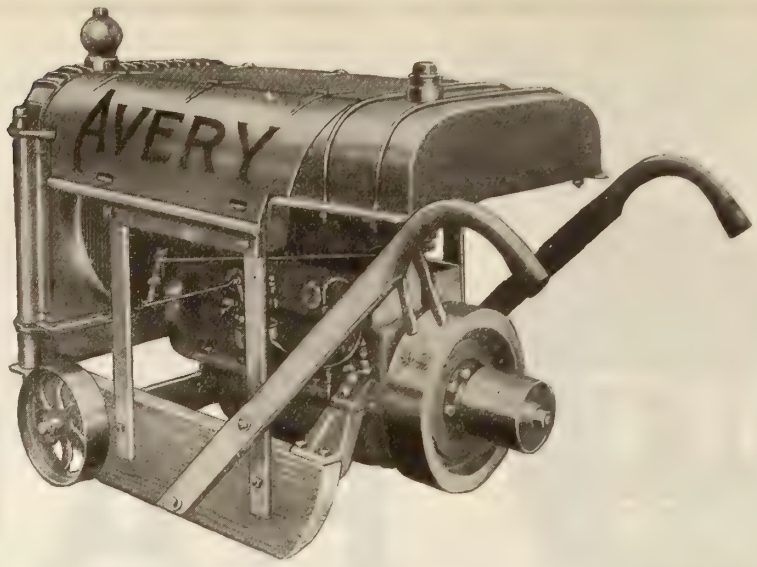
This machine is powered by a four-cylinder motor, rated at 10 h.p. The motor has a four-inch stroke and three-inch bore. The cylinders are cast en bloc with removable cylindered heads giving easy access to the pistons and valves. One of the big features claimed for this small unit is that the belt pulley is situated on the end of the crankshaft, thereby eliminating all gears in transmitting power.

The machine weighs approximately 375 pounds and can easily be pulled or pushed around the farm to wherever it is most convenient to do the different jobs. It has sufficient power to pump water, grind feed, saw wood, run a light plant, run a milking machine and silage cutter. It is simple in construction and easily operated.

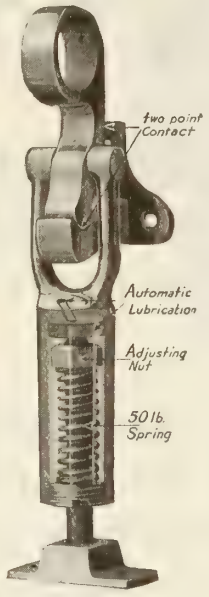
HYRATE BATTERY ANALYZER

THE Service Station Supply Co. have placed upon the market an instrument known as Hyrate battery analyzer, for analyzing, which, the makers say, preserves the very excellent feature of making a high rate discharge through patented chromel resistance and combines with it the unique arrangement of a third terminal volt meter of an easy reading type. Attached to the third terminal of the meter, by means of a flexible lead, is a fork spike as shown in cut. One spike of the fork is the test point for voltage test and the other spike is the Cadmium electrode for making Cadmium test.

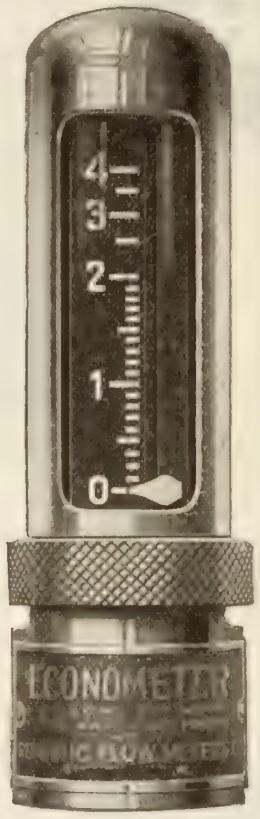
It is fairly well established that the Cadmium test and the open circuit voltage tests are desirable in determining the condition of either group of plates within the cell, without actually dismantling or opening the battery. The Hyrate battery analyzer is a complete battery testing outfit, capable of making three different kinds of tests of storage batteries, as follows: High rate discharge test, plain voltage test, Cadmium test. In addition to the original two terminals of this instrument a third terminal has been added, from which a calibrated resistance leads to the moving coil of the instrument itself. To this third terminal is attached a flexible lead as described above. The addition of the third terminal and lead (which is removable as a matter of convenience) in no way interferes with the use of the instrument as a cell tester. However, when it is desired to take open circuit voltage readings or Cadmium readings either one of the prods of the tester is applied to the positive terminal of the battery and the lead connecting the third terminal of the instrument is applied either to the other terminal for open circuit reading or the Cadmium spike electrode is immersed in the electrolyte to give the positive Cadmium readings. For the negative Cadmium reading the prods are merely shifted to the negative terminal. In addition to making the two generally accepted tests for determining the condition of a battery this tester can be universally used for mere voltmeter work on storage battery cells, thus giving the instrument a very wide range of action.



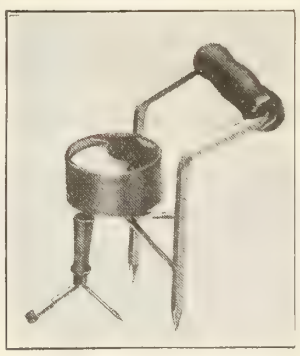
Portable Power Plant



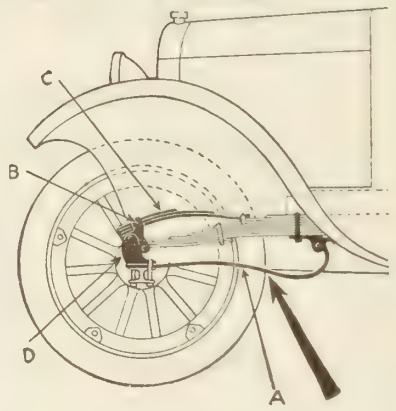
Ideal Hood Lock



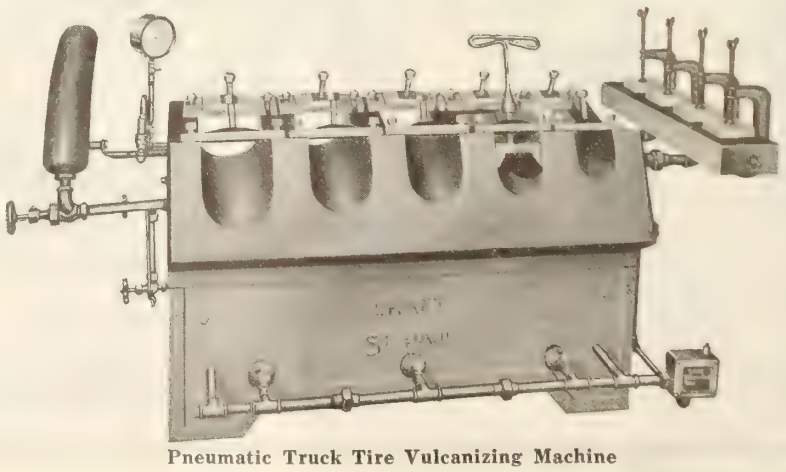
The Econometer



Hyrate Battery Analyzer



Marvel Shock Absorber



Pneumatic Truck Tire Vulcanizing Machine

PNEUMATIC TRUCK TIRE VULCANIZING MACHINE

THE construction of the Wood-Craft pneumatic truck tire vulcanizing equipment is of the single block type, which, the makers claim, has the advantage of compactness and requires the least amount of space. Because of its heavy walls an even temperature is always maintained and 5,000 cubic feet of gas a month is said to be the maximum consumption. The model illustrated on this page consists of the following fittings: Nine pair semi-steel bead moulds (five clincher and four straight side), one 24 in. tube plate, one vulcanizing arm, one inside core clamp, two rows of adjustable screw clamps to adjust the bead moulds, four clamps for the tube plate, four hardwood tube blocks, and one gas regulator.

THE ECONOMETER

THIS is a device for telling the motorist how much gasoline he burns. The makers say it will also tell when the choke is partially choked, when the valves need grinding, when carbon should be removed, when the carburetor and timer need adjustment, when compression is poor, etc. The econometer is mounted on the dashboard and connected between the supply tank and carburetor by means of copper tubing. An indicating pointer moves up and down a vertical scale. The more gasoline used the higher the position of the hand. There is no mechanism and nothing to wear out, the makers say. It is furnished complete with 10 ft. of copper tubing, connecting manifold and strainer, by-pass valve, bracket, screws, gaskets and washers. Made by the Republic Flow Meters Company of Canada, Ltd.

IDEAL HOOD LOCK

THE Ideal Brass Works is manufacturing and marketing a new hood lock, which, they claim, is easily operated, positively prevents rattling of the hood, is adjustable and self-oiling. The hood lock is of the eccentric type which permits it to be operated with one finger and which also permits the use of a very much stronger spring than is now used in the present type of hood locks.

The lock is adjusted by rotating the concentric support or lock body on the anchor bolt which lengthens or shortens the lock as desired. The lock body carries an absorbent pad, which contains sufficient oil for lubricating all moving parts. Each time the lock is released the anchor bolt automatically is forced into engagement with the absorbent pad, which lubricates the moving parts. All exposed parts are made of brass and are all highly polished and nickel plated.

MARVEL SHOCK ABSORBERS

MARVEL shock absorbers for 490 model Chevrolets, which are being marketed by the Marvel Shock Absorber Corporation, are claimed by the manufacturers to give immeasurable comfort and freedom from road shocks. The unique construction of the "shocks," it is claimed, enables the stiff quarter elliptic spring to be lifted from the axles and swung in a pendulum in a manner which cushions both lateral and vertical thrusts, and thus allowing the complete absorption of shocks, which otherwise are transmitted directly to the car frame. The positions of the axles are maintained by means of radial rods of spring steel, while the shocks are cushioned in the equalizer springs, carried above the standard quarter elliptics.

The principle, while it involves the carrying of the weight of the car on the quarter elliptics, as before installation, relieves that member of its former double duty of radius rod and spring.

ROSENHEIM AND THE ISLAND OF YAP

(Continued from page 12)

islands in the North Pacific and won't miss one of them. Pick out one on the map there.'

"'Which one shall it be, Siniavin or Hogoleu?'"

"'No, pick out one that is easier to spell. Ain't there one called 'Yap'?"

"And so the peace conference gave us Yap, which, at high tide, is about the size of a nickel."

"Well, Max, didn't that settle the matter?"

"Sure it settled it for three years, and then Japan gets sore at Callyforny and she takes possession of Yap and defies the United States to find the place and deliver a note, and we write a note to Europe sayin' we realize that Yap ain't much to get for 50,000 lives and two hundred billion dollars, and we didn't fight for territory anyway, but it is the principle of the thing, and what are they goin' to do about it?"

"Well, Japan can have it for all I care."

"Me too, Meyer, but it is nacheral for any administration to want the country to grow greater, and Yap would have rounded out Wilson's term in satisfactory style makin' him a outstandin' figger in history. I was just lookin' up our growth last night in Aby's school book, and our presidents have done big work in makin' us a world power. Jefferson got us the Louisiana purchase which was 827,987 square miles; John Kavincy Adams he got us Florida, over 62,000 square miles; Polk added Texas, 389,166; and then took in Oregon, 286,-541 square miles, and a slice of Mexico again amountin' to 529,189 square miles. Buchanan he tacked on the Gadsden purchase, 29,670 square miles; Grant come through with Alaska, 590,-884 square miles; McKinley netted us Hawaii, Porto Rico and the Philippines, about 130,000 square miles. Yap will look interestin' in this table, bein' 144 inches in area and hard to find on a foggy day, the most expensive piece of real estate any government ever bought."

"I see Wilson and his seckertary of State, Colby, have opened up a law office, Max."

"Yes, and I guess it is lucky for them they selected the law instead of the real estate business. All a lawyer feller has got to do, Meyer, is to look into a thick book and then charge you five hundred dollars for an opinion, which the court may say later is a rotten one, but a real estater what ain't a sharp business man is liable to get stuck if he buys property on the wrong side of the street or a island like Yap."

STIMULATING YOUR SMALL ENGINE BUSINESS

(Continued from page 4)

which raise them off the floor so a person can look them over, without having to bend down to examine it. It is always best to place your display samples about waist high, if possible. They are so much easier to examine and explain to a prospect.

Labor Saving Strongest Argument

When talking engines, keep in mind that your strongest argument is the time and labor it will save on the farm. Don't lay too much stress on mechanical details. Leave those until after the sale has been made and you are explaining the operation. Dwell heavily on the fact that the little engine, costing comparatively a small amount, is going to do the many little tasks that take time and hard work when done by hand. If the prospect expects to use the engine for a variety of work, you will, of course, want to sell him a hand truck of some kind to transport the engine easily and quickly from one place to another. Give careful and explicit instructions about operating and care, especially if a woman is to be the engineer. A little extra time at the time the engine is sold will undoubtedly save you a hurried trip into the country later on.

There is small engine business in your territory that is big. It is worth having and part of it can be secured only through proper education. Adopt the role of teacher a little more and see how much it will add to your volume and profits.

DURABILITY THROUGH BRUSH WORK

PERHAPS you have never thought of it in quite the same attitude of mind before, but it is a condition in painting and finishing that belongs in the list of important factors. It must appeal to the practical man, as he gives thought to the matter, that brush use has directly and to a very great extent to do with the durability of the finish; that this influence goes straight back to the first coat applied and continues undeviatingly out to the finish.

It is also interesting to know that the good brush is more than an incident in the transaction, for without the brush of quality, brush work becomes a vain thing. We must start, then, with an acknowledged first-class brush —one of good stock, fine balance and a spreading, flowing and handling quality practically perfect. With such a brush it then becomes incumbent upon the user to fulfill his part of the contract.

The mere manner of holding the brush powerfully influences the style and goodness of the real brushing operation. Some workmen hold the brush as if it were a pot of gold and likely to escape from their grasp. Nothing of this sort of grasp and handwork should obtain in the actual use of the brush.

Pick up the brush—color, paint or varnish brush—in an easy way, and take it between the thumb and forefinger with the lower part of the handle resting between the first and second finger, and then proceed to use it, allowing the wrist a perfectly free and easy swing, and a full forearm movement, so that as the work goes on it does not become tiresome through a stiff and inexcusably rigid grasp and wrist motion.

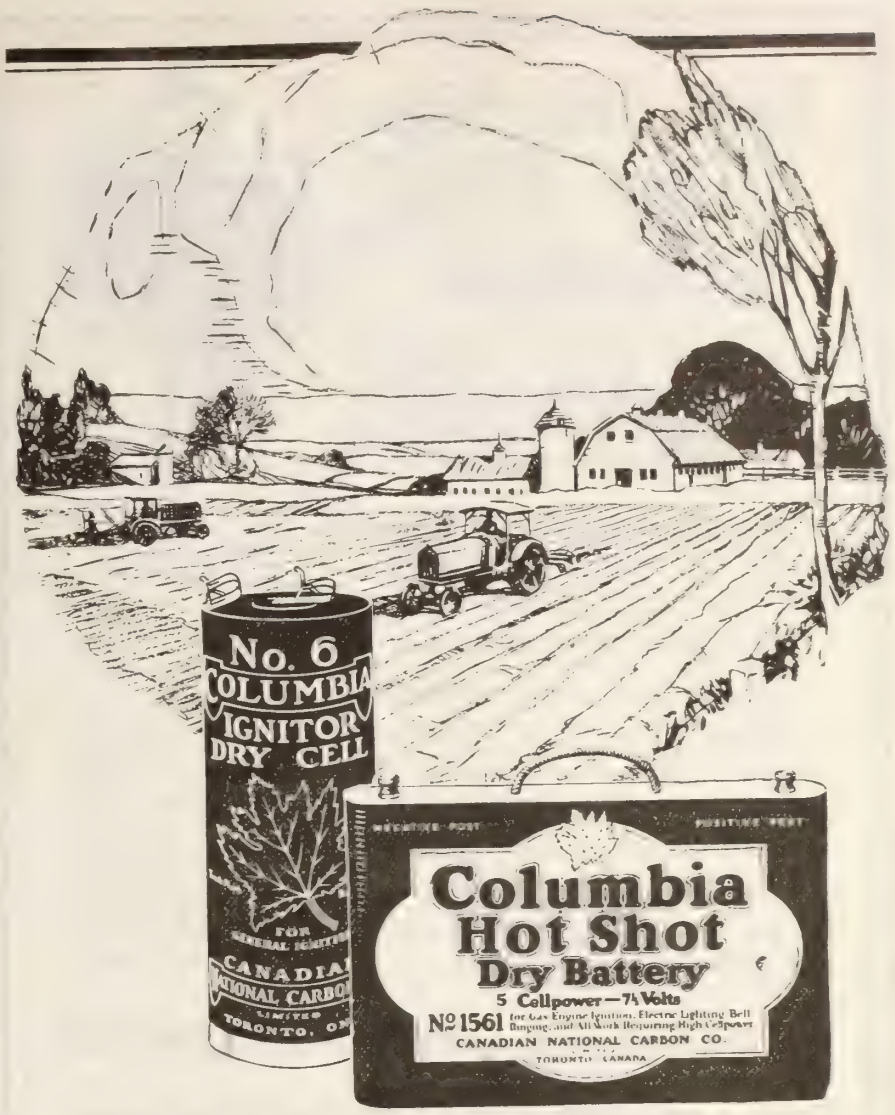
If the brush is held in the wrong way, and there is a lack of the free arm and wrist movement, with a consequent bearing down and heavy dragging of the tool across the surface. the material does not go to its appointed place in a form and to an equal smoothness and depth of film that is necessary to develop ideal conditions for durability. There is a lack of uniformity of depth and flow of material and an absence of the proper dressing out and slicking up of edges and panel ends, etc., so essential to a surface which derives a large part of its capacity for wear from the way and method of flowing the material and brushing it out.

Keep the fact in mind that durability is a direct and logical result of efficient brush work; that this brush work is a co-operative agent working with superior material to achieve a certain thing, and that unless we have these factors present in the painting and finishing process we are destined to fall short of the standard every ambitious painter should try to reach.—Vehicle Monthly.

THE NEW DURANT CAR

PRELIMINARY operations have already begun on the much talked of Durant car. The actual work on the new car will begin in the factory building of the Goodyear Tire and Rubber Co., in Long Island City, New York, which has been purchased by the Durant Motor Co., of New York, for $2,000,000. The main plant of Durant Motors will be located in Flint, Mich.

The new car will be largely an assembled product and will be made in two models, one of which will sell in the United States for something less than $1,000. No Canadian price has been fixed yet. The Durant will be put on the market about August 1.



Look After the Farm Trade in Columbia Dry Batteries

Wide-awake dealers everywhere are taking advantage of these established facts:

1. Columbia Dry Batteries are positively the one source of perfected ignition current for stationary gas engines, tractors, and all farm power.
2. Columbia Dry Batteries are supreme for bells, buzzers, telephones, and portable electric lighting.
3. Columbia quality and our sustained advertising keep Columbia Dry Batteries foremost in the consumer's mind.

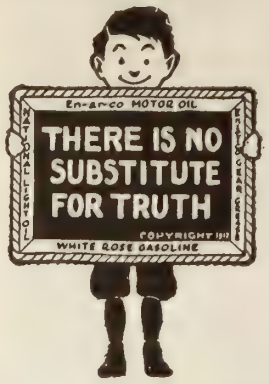
Write in to-day for details on the full Columbia line. It will turn a tide of profits your way.

Made in Canada

CANADIAN NATIONAL CARBON CO., LIMITED
TORONTO AND WINNIPEG 1412143

Columbia Dry Batteries
—they last longer

Let this Sign Bring *YOU* Business



If you sell gasoline and oil, you can get this attractive, novel, life-sized Boy and Slate Sign.

Other dealers have it now—and every one of them is convinced that it brings a vast volume of extra business.

It is made of wood and steel—handsomely painted in natural colors; and is supplied to En-ar-co Dealers along with a series of catchy epigrams, so that a new "eye-catcher" can be put on the sign every other day throughout the year.

Let us place in your hands all the particulars about the En-ar-co Boy and Slate Sign. Address Dept. "M.T.I. 5," Canadian Oil Companies nearest branch for this information—it will be sent free of all cost or obligation to all dealers in gasoline and oil and to garage and service station owners everywhere.

CANADIAN OIL COMPANIES LIMITED

Branches:
Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary

WE GIVE

"Quality and Service"

IN

TRACTOR and TRUCK STEEL CASTINGS

Joliette Castings & Forgings Limited

Head Office: Transportation Bldg., Montreal
Works: Joliette, Que.

It Docks at Your Desk

Our service brings to your desk news items collected from the newspapers relating to your line of business.

Often you plan your affairs on market conditions or new developments, but you could plan much better with all information before you from the whole of Canada.

These newspaper clippings have proved most valuable to business houses, saving time in searching files and often being turned to good account, getting contracts and orders. We cover all parts of Canada and United States and read for all subjects discussed in the press.

Have the news packets arrive regularly at your desk with a cargo of timely news.

Canadian Press Clipping Service
143-153 University Ave., Toronto

With the Manufacturers

The Universal Wrench Co., Detroit, has opened a factory and office in Windsor, Ont.

The Pierce-Arrow Motor Car Co. is now operating at capacity production in the passenger car plant.

The Consolidated Rubber Co. has been making considerable alterations to its engine house at Port Dalhousie.

The Abrams West Columbia Oil Co., Ltd., is a new incorporation with head offices in Toronto and capitalization of $1,000,000.

R. H. Collins, president of Cadillac Motor Car Co., has announced that Cadillac prices will remain unchanged throughout 1921.

Gill Mfg. Co., Chicago, manufacturers of piston rings, has opened new branches in Albany, N.Y., Albuquerque, N.M. and Buffalo.

The Advance-Rumely Thresher Co. has recently completed a new building for its branch in Fargo, N.D., C. J. Famly is manager.

The Coffield Washer Co., Ltd., Hamilton, Ont., has been incorporated with a capital of $50,000, to manufacture washing machines.

U. S. Tractor and Machinery Co., Menasha, Wis., recently made a first shipment of tractors to France for use in the zone of the late war.

The John Deere Plow Co., Moline, Ill., has announced a ten per cent. reduction on all lines of farm implements to be effective immediately.

A. R. Erskine, president of the Studebaker Corp., South Bend, Ind., has been elected a director of the National Automobile Chamber of Commerce.

The Massey-Harris Co., Toronto, are establishing a branch at New Liskeard. This branch will be used as a distributing point for Northern Ontario and Quebec.

The Black and Decker Mfg. Co. has established a service station in New York in the new branch office of the company, Eighth avenue and Thirty-Third street.

The Etemal Battery Company of Canada, Ltd., Winnipeg, is a new concern, capitalized at $1,000,000 to manufacture storage batteries for automobiles, etc.

The Joseph Stokes Rubber Co., of Welland, Ont., have completed the installation of machinery in their new plant and intend to start a quantity production within a few days.

Incorporation is announced of the Hart Stooker Co., Ltd., at Edmonton, with a capitalization of $2,000,000. The new concern will manufacture grain shockers and other implements.

The Sterling Knight Motor Co. has been incorporated at Cleveland, Ohio, with a capital stock of $1,000,000 to manufacture a new high price car using the Knight sleeve valve motor.

The Vacuum Oil Co. has announced a substantial reduction in the prices of Gargoyle Mobiloils. The reduction applies to all grades and all size packages and became effective April 20.

The British American Oil Co. will establish a branch at Camrose, Alberta. A site has been secured and operations on the erection of a warehouse and two storage tanks will commence immediately.

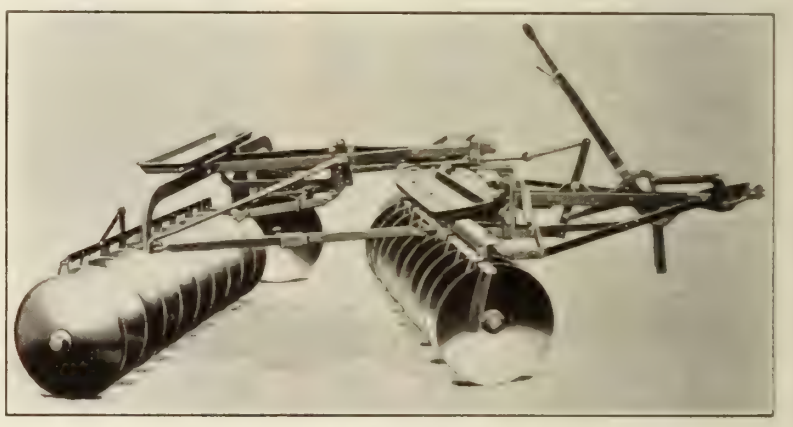
C. S. Mott, vice-president and director of General Motors Corp., has been made chief of the Advisory Staff with headquarters in the General Motors building, Detroit, with the title of executive vice-president.

The Canadian Tank and Pump Co., Ltd., has opened up general offices and showrooms in Toronto at 119 Adelaide Street West. This firm is the Canadian branch of Wayne Oil, Tank and Pump Co., of the United States.

The Joseph Stokes Rubber Co., of Welland, a new industry to Welland last year, has completed the installation of the machinery needed in the manufacture of rubber products, and will be on a production basis shortly.

R. W. Sutherland has resigned as vice-president and general manager of the Splitdorf Electrical Company, Newark, N.J. He has also resigned as director of that company and as president of the Splitdorf Companies of Illinois, New York and Canada.

The Timken Roller Bearing Company announce that G. C. McMullen, who has been for the past three years Pacific Coast representative of the Timken Roller Bearing Co., and Timken Detroit Axle Co., will in future devote his entire time to sales engineering of the Timken Roller Bearing Co., Canton, Ohio.



Grand Detour Tandem Disk Harrow. For particulars see page 14

KAMSACK.—S. Fishtrom is operating a farm implement business in the garage formerly occupied by Carment & Harper.

STANDARDIZATION OF IMPLEMENTS

A. B. McCOIG, member for West Kent, has made some progress at Ottawa, with his plan for having parts of agricultural implements standardized in Canada, so that it will be easy for farmers everywhere in Canada to get repairs. The sub-committee was named by the agricultural implement manufacturers and was informed by the latter of various difficulties in the way of standardization, but it was agreed that in some respects the scheme was feasible.

Samples were submitted of ledger plates, sections and guards, as well as parts of cutting-bar by the Massey-Harris and International Harvester companies, and parts of plow-points and plow-point bolts by the Cockshutt and Verity Plow companies.

Speak for Makers

The representatives of manufacturers present were as follows: A. W. Wallace, International Harvester Co.; George D. Graham, Frost and Wood Co.; T. Whitecomb, Smiths Falls; W. S. McFarlane, Cockshutt Plow Co.; W. A. Watts, Massey-Harris Co.; E. F. Bolte, A. L. Upton, International Harvester Co.; Wm. J. Verity, Verity Plow Co.; Messrs. George Valentine, T. Bradshaw and J. G. Hossack, of the Massey-Harris Co.

The sub-committee who met them were the chairman of the agricultural committee, R. C. Henders, and Messrs. McCoig, Harold, Wright, Nicholson and Dr. J. H. Grisdale, Deputy Minister.

Representatives of the manufacturers argued that to standardize these different parts would be to create a new group of articles which would add to the burden of local agents in the way of repairs to be carried, and also that it would interfere with the improvement of different machines or implements affected. After further parley, however, it was conceded that very material progress might be made toward standardization in the following cases:

Five Special Cases

Ledger plates, as to shape and attachments.

Sections, as to location of rivet holes.

Plow-points, as to location of bolt holes and shape of same.

Plow-points bolts, as to shape.

Sprockets and sprocket chains, nuts for wagon skeins, and nuts and bolts generally.

At a subsequent meeting among themselves, the representatives of the manufacturers passed the following resolution:

"That the representatives of the implement companies present at the meeting of the agricultural committee are of opinion that a measure of standardization is possible on many of the articles considered and discussed with your subcommittee this morning. It will, however, be recognized that any change, even of a minor character, which may be made in agricultural implements may involve important manufacturing considerations, and therefore it is suggested that a board composed of expert engineers, to be named by your committee, and representatives of agricultural implement manufacturers, be constituted to investigate and make recommendations."

This was approved by the subcommittee and was embodied in the report to the main committee, which so reported to parliament.

CANADIAN GENERAL ELECTRIC EXPANDS

OWING to the substantial development that thas taken place in the electrical equipment business of the Canadian General Electric, Toronto, it has been found necessary to take over some of the space that has formerly been included in the Allis-Chalmers plant.

This will be utilized after the necessary equipment has been secured, some of which will be taken from other plants, for the making of transformers.

J. J. Ashworth, general manager of the Canadian General Electric, intimated that it would take some time to finish making the change, but that when completed the plant would be capable of much greater production of electrical equipment.

The plans of the company also call for the disposal of a large amount of used machinery, part of which was used in their war contracts.

SERVICE AND SUCCESS

MILTON BERGEY, advertising manager of the McLaughlin Motor Car Co., Oshawa, in an address on "Business Building Through Advertising" given to the members of the Lion's Club, Toronto, recently said: "If we are looking for the warmth of success we must build the fire of service."

Dealing with the question of advertising the speaker dwelt on the paramount place as one of chief agencies in the modern distribution system. So important had the place of publicity work in the distribution organization become that it was undertaken now by highly trained staffs. The interchange of ideas was admitted by all the world as having a big civilizing influence, but it was not generally realized that publicity and advertising had the same effect. Up to the present the business world alone recognized the importance of these agencies.

Mr. Bergey emphasized the truth of the statement that confidence was the basis of trade. The amount of business a house would do, he said, was in proportion to the amount of confidence the public had in it and he felt no advertising campaign should be mapped out and put into effect without being first tested in the light of this important principle.

Stressing the high value of personality the speaker declared that this applied with equal force to "institutional personality" as well as in the case of the individual. One clerk could destroy in a few minutes the confidence of the public in a business gained through many months of effort and the expenditure of a great deal of money.

BUSINESS STEADILY IMPROVING

CHARLES B. VOORHIS, vice-president and general sales manager of the Nash Motor Company in a recent statement said that business in the automobile industry was improving steadily.

"In stating that business is good," said Mr. Voorhis, "I would not wish to be understood as meaning that the continent as a whole at this time approaches normal. But there is an improvement generally throughout the country, much more pronounced in some sections than others.

"Actual sales and delivery figures from our dealers show that some of them sold at retail more cars in January, February and March this year than they sold in the corresponding months of last year. With the exception of a few spotted sections, practically all our dealers report better sales each month and each week."

GERMAN IMPLEMENTS FLOOD FRANCE

FRANCE is being flooded at the present time by German agricultural machines, according to the recent Trade Bulletin issued by the Department of Trade and Commerce. German industry is re-establishing itself, aided by the value of the German mark. For example, a mowing machine which cost 300 marks before the war now costs about 3,000, or 750 francs at the present rate of exchange, which is about half the price of the machines now furnished by other countries.

BURD
Quick Seating
PISTON RINGS

The outer edges—the Quick Seating feature—lap in quickly, producing a seat in perfect harmony with the hard glass-like surface of the cylinder, resulting in maximum efficiency for this type of ring in the minimum time. Seating is accomplished in about one-fifth of the time required for plain surface rings.

One Piece—Easy to Install

The slow, laborious "lapping in" and the annoying delay before the owner can use his car is eliminated. Burd Quick Seating Piston Rings have won the instant approval of mechanics and motorists. Millions of them are in successful operation. The simple Step-Joint gives the minimum opening and prevents leakage.

Sizes up to and including 4 inches, 75c
Sizes over 4 inches—up to and including 5 inches, 90c

Burd Ring Sales Co. of Canada
322 McIntyre Bldg. - Winnipeg, Man.

BURD HIGH COMPRESSION RING CO. Rockford, Ill.

For Sale

Lathes, Drills, Milling Machines, all kinds of Used and New Equipment

If you are thinking of buying equipment for your garage or machine shop, it will pay you to write for a copy of

CANADIAN MACHINERY
AND MANUFACTURING NEWS

In addition to a Buyers' Directory of leading manufacturers and dealers in New Machinery you will find lists of Used Equipment of almost every conceivable kind. And if you cannot find listed what you require, drop us a line and we will locate it for you. This service is free to readers of CANADIAN MOTOR, TRACTOR AND IMPLEMENT TRADE JOURNAL. Just fill out the form below.

CANADIAN MACHINERY AND MANUFACTURING NEWS
153 University Ave., Toronto, Ontario

Please send me a copy of CANADIAN MACHINERY AND MANUFACTURING NEWS. I (or we) want to purchase the following equipment .....
.....
.....

Name.....
Street Address.....
City.....

(Canadian Machinery and Manufacturing News and Canadian Motor, Tractor and Implement Trade Journal are published by The MacLean Publishing Co., Limited, Toronto, Canada.)

You Can't Get Away With It!

DON'T take chances. Use the McKee Standard Lens that complies with the new "no-glare law" and adds class to your car. The lens is one solid piece of crystal-glass scientifically designed—needs no dimmers —no attachments.

McKEE Standard LENS

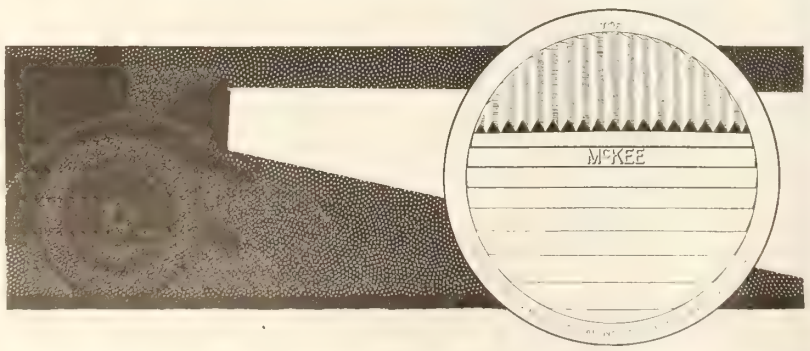
It saves the light that is wasted by the ordinary window glass lens and adds it to the intense beam of light which is concentrated and projected through the horizontal prisms down close to the road bed for 600 feet ahead. And not a ray of this bright white road beam can go above 42 inches from the ground to blind approaching drivers.

Why risk your life and those of others with makeshift devices that weaken the light to comply with the law? For safety's sake use the McKee Lens—the lens that combines an intense road beam with an adequate side light.

Remember that the McKee Lens is legal. It is to your advantage to equip your car with the McKee now.

Garage Supply Co.
23 West Richmond Street, Toronto, Ontario, Canada
Distributors

McKEE STANDARD LENS
Made by McKee Glass Company, Jeannette, Pa.



Where is the Truck Business Going?

By NEAL G. ADAIR, in "Motor World"

SIX months ago you could hardly turn a corner in the automotive industry without hearing some one ask:

"Where is the truck business going?"

More recently there has been a lot of comment to the effect that it had already gone—with pretty general agreement where.

Wherever the truck business went for a time—let that remain an open question—it is coming back. Sales reports, not from every section, but from many sections, indicate that. But, having come back, or at least being on the way back, where is it going from here?

Is it going to be a desultory business, getting a precarious foothold here and another there in the country's transportation system? Or is it going to become the great factor that it can become, with profit for everybody concerned—manufacturers, merchandisers, users?

The answer rests in a degree with truck users, present and future, but largely with the men who make and sell trucks.

Are the men who make and sell trucks going to grasp the vision of motorized transportation?

Are they going to analyze transportation **to learn where trucks can be used?**

Are they going to analyze transportation **to show how trucks can be used?**

Are they going to analyze transportation **to make and sell trucks that fit users' needs?**

A year ago thinking men inside and outside the automotive industry were saying that motor truck sales possibilities were limitless, that the surface had hardly been scratched.

They were right—and everybody believed them because truck sales were booming and dealers couldn't get trucks enough to meet demand.

They are still right—but few believe them now because the truck business, contracted with the contraction of all business through the readjustment period, seems for the moment to be decidedly limited in its possibilities.

Now, as business gets under way and speeds up, the truck business goes with it, but it will not go forward as it might and as it should until the men who make, the men who distribute and the men who sell trucks get deeply and vigorously into the study of ways to demonstrate these uses to an imperfectly educated public and just as deeply and vigorously into the study of means of building and selling trucks that will fit their users' needs; that is, trucks that will give satisfaction and so foster the motor truck idea.

What Is Required of Manufacturers, Jobbers, Dealers

Truck manufacturers need to get away from unnecessary multiplicity of models, confusing prospective buyers, complicating the financing and selling problems of dealers and salesmen and often causing dealers loss. They need to get away from camouflage about capacity. They need to get into searching investigation of transportation, so that they can put into the hands of dealers and salesmen detailed information about adaptation of certain trucks to certain transportation conditions. They need to work out, as far as makers can work out, the problem of prompt and economical service on parts. They need to price their trucks on value.

Truck distributors need to get away from establishment of dealers without living territories. They need to abandon insistence on the exclusive dealer idea unless the dealer has a territory large enough and wealthy enough to provide a continuously profitable business in trucks, parts and service. They need to school themselves and their travellers on trucks and their adaptation to specific transportation jobs. They need to scrutinize dealership applications to guard against commissioning of local representatives without financial, business and service ability to sell trucks right and keep them sold on the basis of owner satisfaction.

Truck dealers need to study until they know the sales possibilities of their territories. They need to obtain sufficient financial backing to permit reasonable stocking of trucks and parts and reasonably adequate service facilities—or else get out of the truck business and leave it to men who can do the job right. **They need to recognize this fact—that it is better not to sell a truck than to sell the wrong one.** They need to equip themselves and their salesmen with knowledge to sell trucks fitted to do the work required by their buyers. They need to stay away from prospective transactions that involve sacrifice of profits in long trades. They need to keep away from sales to individuals or firms financially unable to undertake truck purchases.

Truck salesmen need to approach prospects with this thought uppermost in their minds: The prospect is not primarily interested in the truck they sell; he regards it as just another truck. But he is interested in his own business, and if the salesman goes to him with facts about that business and with a plan for saving money in it or making it larger and more profitable or serving its customers better by the use of certain units of transportation, the salesman will get a hearing.

Buyers' Requirements

In the retail field the chief factor in successful truck merchandising, outside of service, is right analysis of prospective buyers' transportation problems.

Selling a man the wrong truck blights all chances of selling him additions to his fleet or a replacement of his first truck. And without such chances, particularly in cities, where competition is acute, the average of sales resistance is so high that it is hard to make satisfactory profits.

Selling a man the wrong truck also sets up in your community a man who will tell everybody who ask him—and some who don't ask him—that your truck is no good and that you, as a dealer, are no good. Against such odds, profit making is an uphill job. And not only your business, but the whole truck business, is injured and the growth of the motor truck idea retarded.

Some dealers and some salesmen have worked on the assumption that if a prospect said he wanted a certain model of truck, with a certain body, that was the truck to sell him. Occasionally there is a prospect qualified to buy in this fashion. More often, the prospect merely thinks he knows, with the result that if not interfered with he may select a truck too large or too small or with the wrong body or equipment for his work. The most successful truck dealers and salesmen do not take the prospect's word for it when he says he wants a certain truck and equipment. They insist on making an analysis of the prospect's transportation requirements, which he usually agrees to when he is shown diplomatically its importance. The result, often, is the sale of a unit differing

from the prospect's offhand specifications, or no sale at all.

Two Cases

Here are two instances: First, take the case that resulted in no sale.

The sales manager of a sizable truck dealer establishment sat at a civic luncheon with a tea and coffee merchant who mentioned casually that three light trucks of another make which he was using in his business were wearing out. The sales manager gave the tip to a salesman, who got an audience with the tea man and made a thorough analysis of his haulage problem. As a result, the salesman, supported by his manager, recommended that the tea merchant do away with trucks and use horses and wagons for his transportation work. The recommendation cost the dealer a possible sale of three trucks and the salesman a commission, but the tea merchant, who took the salesman's advice and went back to horses as the most economical means of transportation—for his business—has been a booster ever since for this dealer and his line of trucks. The tea man knows a lot of people and his often-repeated story of the truck firm's honesty gets a ready hearing and has a telling effect.

Next, take the case of an analysis which overturned the preconceived notions of a truck buyer. In a middle western city there is an experienced and successful truck dealer who has sold fifteen trucks and two trailers to one contractor during a period of several years. Whenever the contractor needs another piece of equipment he comes to the dealer, regardless of the fact that scores of other firms are canvassing him. This is why: When he was in the market for his first truck the contractor was solicited by this dealer's salesman, whom he told he wanted a three-ton truck. The salesman took the order back to the office, but the dealer declined to accept it, called the prospect on the telephone and convinced him that he should permit an analysis of his haulage job. As a result of the analysis a two-ton truck was sold, saving the buyer considerable money in installation, operation and maintenance. Every time the contractor has needed another truck since then he has phoned or written in, stating that he wanted a truck for a certain sized job. Each time the dealer has insisted on a study of the particular work to be done and several times the contractor has been proven in error on his diagnosis and has bought the truck the dealer prescribed. As a result, all the trucks in this contractor's fleet are working at high efficiency—and he sticks to one truck and one dealer.

The Salesman's Job

And now a few words regarding the details of the salesman's job.

The object of transportation analysis is to fit to the problem in hand a truck which will solve it efficiently, in other words, to supply a truck which will do what the owner requires of it at a reasonably low cost per ton-mile.

It is not possible to set forth a formula on which exact ton-mile costs can be figured because there is no uniformity of road conditions, operating and maintenance costs for different trucks in different sections of the country. But some truck manufacturers have sales engineering or research departments which have figured out the ton-mile costs for their trucks under average road, operating and maintenance conditions in all the important vocations. This information is supplied to dealers and by them to salesmen, making it possible for the salesman, after listing all the conditions surrounding the proposed use of a truck, to fit the conditions into a slot in the factory analysis, as it were, and prescribe the right truck. Other manufacturers analyze individual prospective sales on the basis of questionnaires which the salesman fills out after his interview with the prospect and forwards through the dealer.

In any case, the retail truck salesman must develop a sort of sixth sense enabling him quickly and accurately to sum up the factors involved in a transportation problem.

The salesman should bear in mind these facts:

1. The average prospect won't buy a truck in a day or a week. The purchase is a subject he will give careful consideration and an earnest salesman will be given time to study the transportation problem.

2. The average prospect wants to know just two things:

A—Will the truck selected do the work I need done?

B—How much will it save me in my business, how much additional profit will it enable me to make by expanding my business, or how much better will it enable me to serve my customers?

The salesman who can answer these two questions can sell transportation and the dealer employing such salesmen, with a good truck and a fair and intelligent factory policy to back him up, can build resales and additional sales on the foundation of owner satisfaction.

MARKET FOR TRACTORS AND AGRICULTURAL MACHINERY IN CHILE

THE tractor business in Chile is in its infancy, according to U. S. Commerce reports. In the territory tributary to Concepcion there is a small but new and growing market for this type of agricultural machinery. There are not less than 15 kinds of tractors on the market in this district, and they are being much advertised, and their sale is being pushed by the leading importers who give many demonstrations. The type most in demand is a light, low-priced, and comparatively simple tractor. The largest number of tractors sold of any one make in Concepcion has been about 60, while about half a dozen or less of other makes have been sold. In developing the tractor business here there are some difficulties which would have to be overcome. Plowing, for example, in this region is done by oxen driven by very cheap farm labor. The initial cost of the tractor is large, and the price of gasoline or kerosene is very high, while the ordinary farm laborer is not sufficiently skilled to operate a tractor.

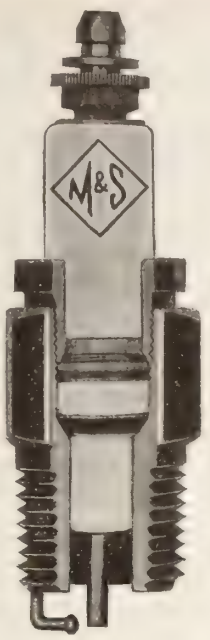
While American tractors have been almost the only ones sold, competition is developing. In the recent agricultural exposition in Concepcion several foreign-made tractors were exhibited and created considerable comment. These foreign tractors had attachments to completely pulverize the ground. One type was large, while the other was a very small one which could be used in the cultivation of vineyards.

ANN ARBOR MACHINE CO. REDUCE PRICES

IN view of the general reduction in the price of all commodities entering into the construction of their product, the Ann Arbor Machine Co., Ann Arbor, Mich., announce that they have reduced the price of their entire line of hay balers 20 per cent. and 15 per cent. from last year's prices making a net decrease of 32 per cent.

The last reduction of 15 per cent. went into effect April 1st, and this brings the price of the Ann Arbor line of hay balers down to very nearly pre-war prices at the factory. In making the announcement of the reduction the executives of the company said:

"While this leaves very little profit to the manufacturer, we feel that by assuming this loss of profit in placing our line in the hands of the consumer at a cost corresponding with the present prices of farm products, we are assisting to equalize and stabilize prices. About the only extra expense to the consumer over pre-war cost would be the excessive freight rates."



Made in Canada

Models

500—½" Standard
501—⅞" Standard
502—⅞" Long
503—⅞" Long with Chevrolet Terminal
506—½" Long
504—Regular Porcelain
505—Chevrolet Porcelain

M&S

The Plug with the Hotter Spark

The ball point of the "M & S" plug creates a larger and hotter spark, causing more complete combustion. This hot spark will give your car new life and more power.

The three-in-one terminal is adapted to any style ignition wiring. The high-grade chemically glazed porcelains are interchangeable — one porcelain fits all plugs.

DEALERS—The "M & S" plug is standard equipment on the Overland "4." Ask your jobber for them.

Russell Gear & Machine Co., Ltd.
1209 King Street West
Toronto

Genuine Coach Building

"Everything Above the Chassis"

Imperial Tops are distinctive in quality of design and workmanship. In the "sweep" and "swing" of the classy design and in every join and fitting there is evidence of the hand and brain of the master coach builder.

"There's a difference" in bodies and tops as we make them—a difference you'll be tickled to hear your customer talk about.

The experts who have in charge the building of Imperial Tops received their training in the works of the famous Parkers, English Coach builders. The work they are turning out here shows how thoroughly and competently they had been taught.

Let us make you our proposition—only one representative in each locality.

Auto Top and Equipment Co.
LIMITED
270 Dundas St. W.
TORONTO

Tractor Operation Showing Rapid Expansion in Western Canada

A Summary and Forecast by the "Nor'-West Farmer," Based on Figures Presented in Their Advertisers' Service Bulletin, No. 41

ENORMOUS expansion of the automobile and truck industry in the field of transportation is closely paralleled in importance by the rapid development in gasoline and kerosene tractors in the field of agricultural power equipment. This development has been of paramount importance in the prairie provinces of Western Canada, which have witnessed an unprecedented increase in grain crop acreages during the past six years. There can be little or no exaggeration in stating that the modern gas tractor ranks as one of the foremost factors in the maintenance of Canadian wheat as a permanent and increasingly important item in the world's bread supply. This applies more particularly, insofar as Western Canada is concerned, largely because of the prevailing tendency towards "big" farming operations in that area.

Conservative estimates based upon a careful survey of the situation over a number of years place the number of tractors in operation in the Western Provinces of Manitoba, Saskatchewan and Alberta during the 1920 season at not less than 33,000. That this represents a growth but little short of remarkable is convincingly shown in the summary of sales for the past four years which are as follows: 1917—5,000; 1918—7,500; 1919—9,000; 1920—10,000, or total sales amounting to 31,500 since 1916. These figures have been arrived at after the most careful investigation and have been substantiated during the past three years by actual reports on the season's operations, received from manufacturers and distributors doing business in this territory.

It is interesting to note that the steam traction engine, at one time considered as the last word in agricultural power, is being practically pushed out of the field by the internal combustion machine, both for plowing and threshing operations. Sales records show that only 104 steamers were sold throughout Manitoba, Saskatchewan and Alberta during 1919, while the figure fell to 89 last year. "One man" control, flexibility of operation, smaller initial investment, reduction of fire hazard, and greater ability to keep out of trouble in heavy going are some of the factors which have contributed to the successful invasion of the field by machines using gasoline and oil fuel.

It has been estimated that the total valuation of tractors in operation in this territory during 1920 was approximately $21,000,000. This figure has been reached by using the current net average cost price as a basis, allowing a liberal depreciation for each year on machines less than four years old and a purely nominal valuation previous to that date. On such an admittedly conservative status, the above figure should be by no means an overstatement. In addition, and without reference to any other automotive equipment, a fair allowance for the value of special tractor plows in use last year would amount to a further item of at least $7,800,000.

The previous paragraph gives a good idea of the size of the investment which is represented by tractors and tractor plows in Western Canada. The annual maintenance and operation cost of this huge fleet of power units also reaches an enormous amount which is expanding with the same rapidity as the industry itself.

The average period of operation as given by a large number of authorities was 109 days per year. Other authorities have set this figure considerably lower. Even allowing only fifty days work each season, however, we find that a total of more than 33,000,000 gallons of gasoline or kerosene would be required for fuel purposes. Lubricating oil is another large item while the providing of replacement parts and repair service is an important business in itself.

Discussion has waxed hot and furious over that favorite topic of all those who are interested from either the selling or purchasing angle—"the best and most suitable size of tractor." It is not the province of this article to lay down the law on any such controversial subject. Experience has shown that there is no universal "best" size. This consideration must always be governed by external conditions of operation. As far as Western Canada is concerned, however, it has been demonstrated beyond argument that the small tractor which will develop up to 10-20 horsepower, seems to be most popular in a great majority of instances. Sales records and opinions of prospective purchasers bear out this statement most effectively.

Most Popular Size Tractor

In an investigation recently conducted among a large number of its subscribers by "The Nor'-West Farmer" opinions as to the most desirable size of tractor were requested from those who considered themselves as possible purchasers. These opinions are expressed below in percentages of the total number of reports received. For purposes of comparison, actual sales in 1920 and 1919 are also given, divided into groups according to size to correspond as closely as possible. It will be seen that the expressed preferences coincide fairly well with the actual sales recorded, the most noticeable variation indicating that many who originally claim to favor a size of about 12-25 H.P. finally purchase either a somewhat larger, or smaller, machine.

The above table shows very convincingly that the small tractor of about 10-20 H.P. is purchased in more than double the quantities of any other size and has constituted more than half of the total sales during the past two seasons. This is in keeping with the growing tendency towards individual ownership of power units of suitable size for the average farm as against group purchases of more pretentious equipment with consequent difficulties of use and maintenance.

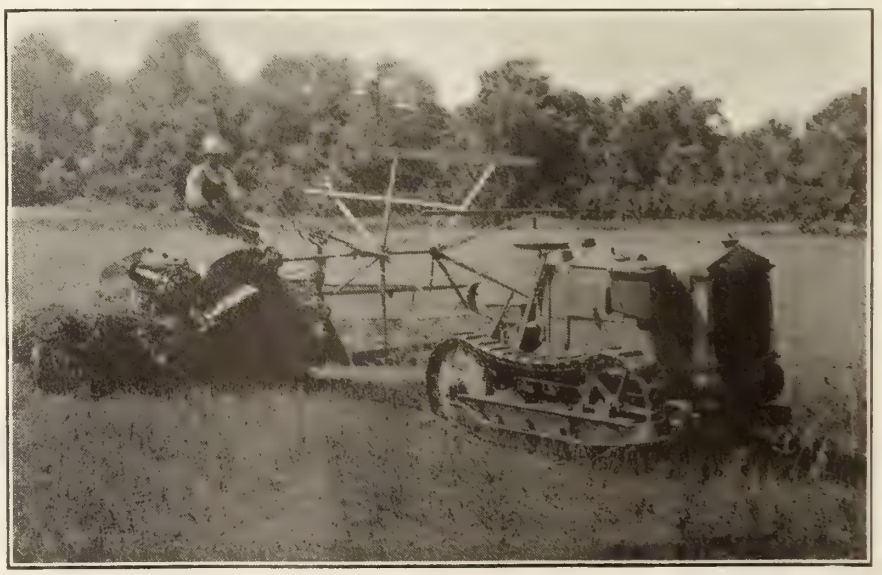
Tractor in West to Stay

The majority of opinion predicts only a fair business in tractors this year. Draft horse and feed prices have shown considerably more of a comparative reduction than tractors and fuel. This consideration together with more or less general restriction in public buying of all kinds will necessitate a lot of really intensive and constructive sales effort from the man with tractors to market. There are strong arguments in his favor, however, and they will have to be brought out and set to work again. The tractor has come to Western Canada to stay. This year is not going to be like the last few seasons of big business and easy money, but the manufacturer or distributor who has his business well in hand is going to get a fair share.

Big Market For Reliable Machines

In conclusion it is gratifying to note the stabilization of the industry through withdrawal of certain machines from the market which were handled here without adequate preparation for permanent business connections. Tractors now being sold more or less generally in Western Canada are made by about thirty-five different manufacturers, as against over fifty on last year's list. This is a harsh reduction but will undoubtedly have a beneficial effect on the industry at large. There is going to be a lot of good business for those concerns who are established permanently and in a position to carry out adequate dealer co-operation and development of new territory. It is now largely a question of confidence and cultivation. There is a big permanent market for reliable, efficient tractors backed by established distribution facilities, capable of equal expansion with the growth and development of a country which has just begun to realize on its agricultural possibilities. Our estimate of tractor sales in Manitoba, Saskatchewan and Alberta for 1921 is 7,500.

Opinions Expressed by Subscribers—				Actual Sales Reported 1920	1919
8-16 to 10-20	favored in	42.9%	of reports	52.9%	54.0%
12-25	do.	27.2%	do	20.0%	16.9%
15-30	do.	17.3%	do	22.4%	22.8%
20-40	do.	7.8%	do	3.1%	4.2%
25-45 and over	do	4.6%	do	1.4%	2.0%
Total Sales				10279	8844



Cletrac being operated from the load by the new line drive.

OPEN NEW REPAIR SHOP

THE Vulcan Engineering Co. has taken over the old Fort William Machine Co. building on Christine street, Fort William, Ont., and will handle all kinds of automobile repairs, gas and steam engines and general blacksmith work. The new company will be managed by three local men, H. Wadsworth, F. Raby and W. Curtis.

COLLINS LEAVES CADILLAC FOR DURANT ORGANIZATION

R. H. COLLINS has resigned as president and general manager of the Cadillac Motor Car Co. to associate himself with W. C. Durant in the development of Durant Motors, Inc. He will head the Durant subsidiary company in Michigan which may be known as the Durant-Collins Co. In this capacity he will be in charge of the chief manufacturing activities of Durant motors which will be centralized in the Detroit district. The main factory will be located either in Detroit or Flint. Collins is said to favor locating in the former city.

The addition of Collins to the Durant organization is regarded as a strong acquisition. He will have much to say regarding the development of the Durant line and it is thought probable that in addition to the Durant Four there also will be a Collins car.

THEY'RE SELLING 'EM

SELLERS AND JONES, LTD., of Fort William, Ont., recently received seven carloads of automobiles, of which shipment practically every car was sold before arrival. The balance was disposed of in a few days.

LINE DRIVE ANNOUNCED FOR CLETRAC

THE Cleveland Tractor Co., manufacturers of the Cletrac tractor, announces the perfection of a line drive attachment for use on either the Model H or Model W Cletrac. This move is to meet the demand for a control mechanism, which will permit the operator to "ride the load." It makes a one-man outfit of the tractor and almost any farm implement.

While the greatest use to which the line drive will be put is in connection with the grain binder, the makers state, it is also used in seeding, manure spreading, mowing and many other jobs to advantage.

In operating with the line drive the tractor is handled exactly like a team of horses. The tractor is guided by a pair of lines and stopped by pulling on both lines at the same time. An extra pull on one line throws the gears into neutral and the lines may then be released while the outfit is standing idle. In starting, both lines are pulled back, an added pull on one line throws the gears into mesh, and when the lines are slackened the clutch becomes engaged and the tractor moves forward.

The attachment makes use of the standard steering post and clutch throw-out, and after it is installed the tractor may be handled either from the drawn implement or from the seat of the tractor without change or adjustment. The operation, it is claimed, is simple and positive and makes the tractor a still greater labor saver on the farm.

I. H. C. WORKERS AGREE TO REDUCTION IN WAGES

AS a result of an investigation conducted by the industrial council of the International Harvester Co., of Canada, Hamilton, Ont., an amicable settlement of the question of wages has been reached. This council, which is composed of eight representatives of the workers elected by the employees in the different departments, and an equal number of representatives of the company, after an investigation of the company's books concerning cost production, orders, etc., and a survey of the wage returns of all employees, regretfully conceded that a reduction was necessary if the plant was to continue in operation. As a result a further cut of 6½ per cent. in wages will follow the reduction of 13½ per cent. instituted some time ago. The minimum wages of laborers are cut from 45 to 40 cents, and the minimum wage for girls to 28 cents an hour. The employee representatives reported among other things that:

"We, the employee representatives, find that owing to the lack of orders on account of the high cost of machines and large stock on hand, the company's proposed reduction of 20 per cent. on day and piece rates, and 10 per cent. on salaries, seems necessary, and wish to go on record as regretfully accepting same in hope that the plant may be kept running.

"After carefully reviewing the reductions made so far, and the further reductions necessary to meet the objective asked for, and having tried in every way, without success, to find some other way of accomplishing the result, we endorse the present method of reducing the day and piece work rates in force November, 1920, until a total reduction of 20 per cent. is reached."

The wage reductions made so far by the company on the November scale average 13½ per cent., and according to the finding of the council the company is warranted in making a further cut amounting to 6½ per cent.

The council presented its report to F. J. Gernandt, the local superintendent, who expressed satisfaction at the finding, which he believed would be the means of averting a shutdown of the plant and turning over 1,500 hands out of work.

The works council of the Oliver Plow Works, a subsidiary of the International Harvester Co., is now preparing a report.

It is stated the finding of the council has been well received by a majority of the hands employed at the Harvester works, and will be the means of steadying the labor market, it is thought, by many other workers.

An explanation in regard to the 10 per cent. cut in the price of the company's products not taking place till next year was made by an officer, to the effect that the product marketed this year was made up months ago, with wages and material at the top price.

DISPLEASED WITH AMENDMENTS TO MOTOR VEHICLE ACT

THE secretary of the Winnipeg Automobile Club in a letter to the Manitoba Free Press regarding the recent amendments to the Motor Vehicle Act writes as follows:

"The amendments to the Motor Vehicle Act, introduced by the government during the present session of the legislature, were carried practically without change in spite of strong protests from the Winnipeg Automobile club and the Manitoba Motor league.

"The Winnipeg Automobile club raised no objection to an increase in the license fee provided the money raised from license fees was ear-marked for the construction of roads 'under the Good Roads act,' and the taking over of construction and maintenance of all trunk roads by the government.

"The act as amended shows that the protests of the Automobile club were absolutely ignored by the government, and although the money appears to have been ear-marked for use in road-building only, it has been done in such a manner that there is no control of the money for the construction of a general system of highways that would connect and serve all parts of the province.

"The stand of the Automobile club in regard to the method of calculating horsepower was the only item receiving the attention of the government, and, in the adoption of the rating of the National Automobile Chamber of Commerce as the basis of horsepower for license purposes, the Winnipeg Automobile club did secure for its members the charging of a license fee on actual horsepower, and not on advertised developed horsepower at high rates of speed.

"In other words the motorist will pay for what he actually gets under normal conditions of operation.

"In making the fee retroactive to January 1, the government established a precedent which shows that if a law is on the statute book it does not necessarily follow that it is worth anything, as the government can change it at any time to suit its own convenience as was done in the present case, and it would appear necessary to keep closely in touch with the Parliament Buildings to make sure that other laws are not being made retroactive, to the detriment of the citizens of the province."

GROWTH OF MOTOR INDUSTRY

STATISTICS compiled by the United States National Automobile Chamber of Commerce recently shows to what extent the automobile industry has grown in that country.

In 1920 the production, export and registration figures were greater than in any previous year.

The total wholesale business in motor vehicles, parts, tires and accessories last year amounted to $3,594,814,620. Included in this are passenger and motor truck sales of $2,232,927,678, parts and accessories of more than $725,000,000 and tire replacement business of $636,750,000.

In 1920 the total number of vehicles produced was 2,205,197, of which 1,833,158 were passenger cars, and 322,039 trucks, a gain of 12 per cent. over the total motor truck output of 1919.

Automobile registration for 1920 totalled 9,211,295, or 22 per cent. more than 1919. Nearly 1,000,000 of these vehicles were motor trucks.

South Dakota now has one automobile for every five persons, Iowa one for every five and a half and Nebraska one for every 5.9. New York leads the list on the basis of gross registrations with 670.290 vehicles.

Exports formed a greater part of the automobile business last year than ever before having been 7½ per cent. of total output, compared with 4 per cent. in the preceding year. Nearly 171,000 motor vehicles were exported, or more than double the 1919 figure of 86,652.

Total levies assessed upon automobiles last year exceeded $316,720,000. Over $148,000,000 of this was in Federal taxes, a sum sufficient to cover the Federal Judiciary, Congressional and Executive expenses, as well as the costs of the Departments of Interior, Commerce, Treasury, Justice, Labor and Agriculture, plus the expense of the diplomatic and consular service.

Following tabulation shows combined production of passenger and commercial motor vehicles and their wholesale value in 1899, and from 1916 to 1920:

Growth of Motor Industry.

Year	Number	Wholesale val.
1899	3,700	$ 4,750,000
1916	1,583,617	954,969,353
1917	1,868,947	1,274,488,449
1918	1,153,637	1,236,106,917
1919	1,074,016	1,885,112,546
1920	2,205,197	2,232,927,628

You know how Asbestos turns back fire—

That's how Spedolene turns back the heat generated by friction in gears and bearings. Spedolene protects surfaces exposed to heavy and constant friction from the heat that would pit and scour and disintegrate. Spedolene is a specially compounded mixture of the oils used in the best lubricants and asbestos. The asbestos content not only insulates one surface from another, it also forms a cushion, thus relieving the parts of the wear and tear of direct contact.

Spedolene is just as effective on a hot summer's day as on the coldest day in Winter.

SPEDOLENE REFINING & MANUFACTURING CO., Ltd.
MONTREAL

Now as never before—
You Need Sound Financial Information

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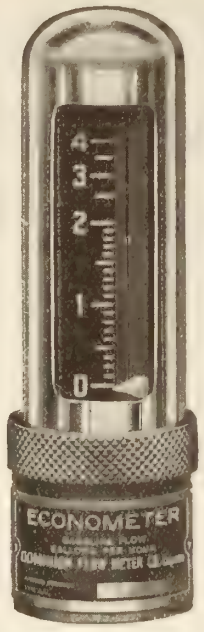
The *Econometer*

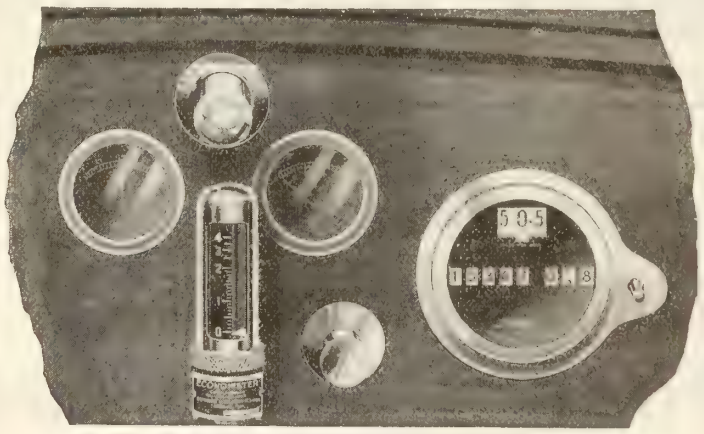


sends you business

IT WARNS the motorist about the small jobs that should be done to keep his car efficient.

THE motorist knows that small jobs neglected grow into big ones.

SO—because the **ECONOMETER** warned him—he brings the repairs to you at once.



Section of Automobile Instrument Board showing ECONOMETER conveniently placed alongside speedometer

It warns you of trouble

very quickly. If a car should run 15 miles on a gallon of gas and the **Econometer** suddenly shows that it is only running 10 miles to the gallon—something's wrong! It may be valves, carbon, carburetor, timer, compression, clutch, brakes, transmission, bearings or tires—but there's something to be seen to at once.

And the motorist will bring it to you

The **Econometer** will at all times show the consumption of gasoline in gallons per hour.

It is a sure Trouble Detector.

Price $20.00 Complete.

Write us to-day for our proposition to dealers, garages and repair men.

Dominion Flow Meter Co., Limited

Department A

145 West Wellington Street, Toronto.

DAUPHIN AUTO CLUB ELECTS NEW OFFICERS

AT a recent meeting of the members of the Dauphin Automobile Club the following officers were elected for the current term:

Hon. president, G. H. Palmer; president, M. Wick; vice-president, J. A. Ball; secretary-treasurer, F. E. Chase; executive committee, M. Wick, J. A. Ball, F. E. Chase, Thos. Jordan, A. H. F. Stelck, W. A. Brinkman; membership committee, W. A. Brinkman, Ross Walker, J. W. Johnston, M. Wick, Jas. Wait, M. A. Spillett, H. E. Fraser; sign-posting committee, A. H. F. Stelck, W. A. Brinkman, J. R. Eagle, J. A. Gorby, J. E. Wallwin; good roads committee, Thos. Jordan, A. H. F. Stelck, W. A. Brinkman, D. D. McDonald.

The membership fee for the season is $3, which includes membership in the Dauphin Automobile Club, membership in the Manitoba Motor League and badges of both organizations. For an extra fee of $1 members receive the 1921 improved Road Guide.

It is the intention of the club to make an active canvass for members at an early date.

A NEW BOOK ON THE MOTOR TRUCK

THE Norman W. Henley Publishing Co., New York, have just published a new book entitled "The Modern Motor Truck," by Victor W. Page. Mr. Page is an authority on every phase of automobile design and practice.

This book covers practically everything one should know about all types of trucks—gasoline and electric—Industrial tractors, and truck bodies. It is written in language everyone can understand, and is in no sense of the word a technical treatise. It is a practical book that will make special appeal to the mechanic who is providing a truck repair service. Everything in the book, the publishers say, dealing with truck repairs, operation and upkeep, has been tested out in real service. The subjects dealt with are as follows: When to use motor trucks; Motor truck parts and functions; Fundamentals of truck construction; Truck body types; Engine parts, timing and design; Engine installation; Cooling, lubrication, carburetion, ignition and electric starting; Power transmission—clutch and all forms of change speed gears; Worm and internal drive axles; wheels, rims and tires; Gas—electric trucks; Loading and unloading devices; Dumping bodies and struction — steering gears; How to hoists; Chassis suspension—frame condrive and care for trucks; How to locate and repair engine troubles; Truck operation data—cost data; Service station and garage systems; Trouble shooting; Trailers and special bodies; Electric trucks.

"The Modern Motor Truck" sells for $5.00. It contains nearly 1,000 pages, has more than 700 illustrations and is bound in cloth.

GOODYEAR CONTROL PASSES TO BANKERS

NEW YORK, April 21.—Control of the Goodyear Tire & Rubber Co. has passed from F. A. Seiberling, now the president, to a syndicate headed by Dillon, Read & Co., New York bankers, which has underwritten $30,000,000 first mortgage 20-year 8 per cent. sinking fund gold bonds due May 1, 1941.

During the life of the bonds, the management of the company, with the right to elect a majority of the directors, will be vested in Clarence Dillon, John Sherwin, chairman of the board of directors of the Union Trust Co. of Cleveland, and Owen D. Young, vice-president of the General Electric Co., or their successors, through management of stock or a voting trust. Some changes in the present personnel are expected.

The syndicate which has underwritten the bonds includes Goldman, Sachs & Co., which a few months ago made a temporary loan of $15,000,000; the National City Co., the Guaranty Co., Lee, Higginson & Co., the Chase Securities Co. and Blair & Co. The bonds are offered at 99 and the mortgage provides for the retirement of the entire issue at 120 and interest by drawing by lot $750,000 on each interest date beginning November 1, 1921.

The proceeds of the first mortgage bonds, together with the proceeds of $27,500,000 10-year 8 per cent. debentures, which will be offered to stockholders, will be used to pay the company's current obligations and to increase working capital. The mortgage provides that the company must maintain at all times net current assets equal to 125 per cent. of the entire amount of bonds outstanding.

Approximately 70,000 stockholders and merchandise creditors assented to the plan for reorganization as presented by the bankers.

The company still is increasing production and running ahead of its original plan to add 12,000 men to the payrolls this month. The number of reemployed workers will reach 4,000 by May 1. The factory last week reached a production of 18,000 tires a day and this week is going to 20,000. Goodyear is the first Akron company to restore the midnight shift.

The B. F. Goodrich Co. has taken on 1,000 men and is increasing production from 9,000 to 15,000 tires daily.

Firestone is adding 2,000 men to its force and going to 15,000 tires a day. —Motor World.

RICH, VIRGIN LAND WAITING FOR THE HOMESTEADER

AN increased demand by the public for information regarding land settlement is reported by the Department of the Interior at Ottawa. This increased interest is attributed partly to the fact that Crown lands in Western Canada within fifteen miles of a railway, which heretofore have been reserved for returned men, became available for civilian entry on the 1st of May.

Besides Crown lands that may be available, it is estimated that there are about 200,000 quarter-sections of privately-owned lands lying idle in the Prairie Provinces, most of them within easy reach of railways. The same condition applies, though in a lesser degree, to the older provinces of Canada. This condition is not, however, due to lack of value in the land itself ——on the contrary and particularly in the Prairie Provinces, much of this idle land is rich, virgin soil—for when one considers Canada's vast land area and its comparatively small population it is at once apparent that a large portion of the area in private ownership must be unoccupied and available for purchase at reasonable prices.

In addition to its activities in connection with the settlement of vacant Crown lands in the Western provinces the Department of the Interior, in cooperation with provincial officials, has compiled and published very full particulars regarding unoccupied, privately owned farm lands in Manitoba, Saskatchewan, Alberta, Nova Scotia, New Brunswick and Prince Edward Island. This information, which has been published by districts, is issued free of charge and includes such details as the price at which land may be purchased, the terms of sale, acreage suitable for cultivation, nature of soil, and value of buildings. With such information in his possession the intending purchaser may negotiate with owners of land in any district in which he is particularly interested.

In their endeavor to find a suitable location prospective homesteaders or purchasers will find of marked value the dual service which the Department of the Interior, through its Natural Resources Intelligence Branch, is now in a position to render.

MAYBE ADAM LAUGHED AT THESE

An income-tax form was returned recently with the following remark:

"Sir, I belongs to the Foresters and don't wish to join the Income Tax."—Tit-Bits (London).

* * *

Homely Spinster—You know, doctor, I am always thinking that a man is following me. Do you think I suffer from hallucinations?

Dr. Blunt—Not the shadow of a doubt about it, madam.—Boston Transcript.

* * *

"Does yo' still refuse, sah, to pay me dem two dollars I done loaned yo' de Lawd on'l knows when?"

"Nussah!" dignifiedly replied Brother Bogus. "I doesn't refuse; I dess refrains."—Kansas City (Mo.) Star.

* * *

"You want me to raise your salary—eh?" said the stern employer. "Give me at least two good reasons."

The meek employee gazed sadly at his master, and murmured—"twins!"—Edinburgh Scotsman.

* * *

Pa—So at last you are going to start right! I like what you say about wanting something for a rainy day, boy.

Son—Yes, Dad.

Pa—Well, I'll help the good work along; here is a hundred, what are you going to do with it?

Son—Get some non-skid chains for my roadster.—Judge.

* * *

Jimmy's mother was giving him a sound scolding about his unwashed neck.

"You know you haven't washed your neck," said his mother.

"Gee whiz!" said Jimmy, a note of desperation creeping into his voice, "ain't I goin' to wear a collar?"—New York Sun.

* * *

A Western evangelist makes a practice of painting Bible quotations and religious mottoes on rocks and fences along public highways. On one big flat rock he painted these words:

"What Will You Do When You Die?"

An advertising gazabo came along and painted underneath that question:

"Use Delta Oil: Good for Burns."

* * *

Murphy and Moran, who had not met for years, were exchanging confidences at an Irish fair.

"Shure, it's married Oi am," said Murphy, "and Oi've got a foine hilthy boy which the neighbors do say is the very picture av me."

Moran gazed at his friend's far from beautiful face, then said:

"Och, well; what's the harrum so long as the choild is hilthy?"—Country Gentleman.

* * *

A regimental band was about to be organized at one of the war-time cantonments and, after the first rehearsal, the officer in charge was signing up the candidates.

"Your name?" he asked the trombonist.

"Sam Jones," returned the embryo trombonist.

"Your station?"

"Camp Devens."

"Your rank?"

"I know it," sighed Sam.—The American Legion Weekly.

* * *

"Were you trying to catch that train, sir?" he asked pompously.

The panting would-be passenger eyed him balefully for a second before he hissed in reply: "Oh, no, I merely wanted to chase it out of the station."—The Arklight.

* * *

Motorist (after hitting pedestrian)—"You were trying to cross the middle of the block."

Pedestrian—"What difference does it make? If I cross at the corner you will knock me into the middle of the block, and we might just as well begin there."

Tractor Distributor Wanted

American Tractor Manufacturer wants a distributor in Canada. This tractor has passed the official tractor tests of the University of Nebraska, equipped with Timken Roller Bearings, 2 models, 12-20 and 20-30. If interested, write the editor of M.T.I.

Elevates by Air Blast No Chains Gears or Buckets

Move, clean and grade your grain in ONE operation; fill bins and cars without scooping and make more money by using the

Liberty Grain Blower

Elevates 30 feet—300 to 800 bu. an hour. Only ONE moving part. 6 H. P. runs it. One man can move it. Costs half price of oldstyle elevator.

FREE BOOK illustrated, tells how to increase grain profits. Send name for copy—a card will do.

LINK MFG. CO. Dept. 710 Portage la Prairie, Man.

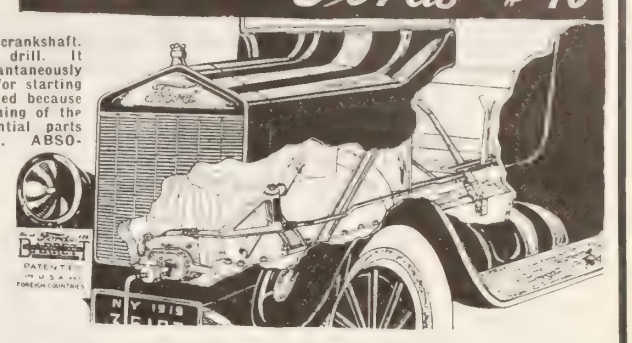
Simple, Durable, Economical, Reliable

BARRETT SELF STARTER AND PRIMER

GUARANTEED FOR FIVE YEARS — For all Fords — $40

RELEASES automatically in case of backfire and does no harm to the operator, engine or starter. No cables, no chains, no pulleys and no springs to wind.

75% increase of leverage on crankshaft. Easy to install, no holes to drill. It STARTS COLD ENGINE instantaneously even in zero weather. Ready for starting any time and as often as wanted because it does not depend on the running of the engine for power. All essential parts made of the very best steel. ABSOLUTELY NOISELESS. Not a luxury, but a necessity. Endorsed by prominent automobile engineers and mechanical Ford experts as mechanically perfect in every respect and the best that has come under their observation. The Special Primer which is supplied free with every Starter, vaporizes the gasoline direct into the cylinders, assuring a quick, positive start. The Primer is also operated from the seat.



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GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

Damaged—
Radiators--Fenders--Lamps--Running Boards

BEFORE

AFTER

rebuilt and an A-1 job guaranteed. You cannot take a chance on repair or new work of this kind unless you are fully equipped to give satisfaction.

Relieve yourself of all worry and work by sending these jobs to us.

We are the oldest auto repair shop in Canada and have a staff of expert mechanics who give excellent service on all work.

Write us for our Dealer Proposition.

WHITE & THOMAS, 210 SIMCOE STREET **TORONTO**

Our Springs + Our Service = 100% Satisfaction

Let us Prove this to you in—repairing—building or making to Special order. If it is a Spring Problem you are up against—leave it to us. We are specialists in our line and will relieve you of all annoyance and work.

We guarantee satisfaction and good workmanship. You and your clients will be pleased with our service.

Write us for our Dealer and Repair-shop Proposition.

COZENS & MAYNARD
Automobile and Truck Spring Service Station
4 to 6 Wood St., Toronto

CANADIAN Motor Tractor and Implement Trade Journal BUYERS DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

AUTO ACCESSORIES
Auto Top & Equipment Co., 270 Dundas St. W., Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Canadian National Carbon Co., Toronto and Winnipeg.
Cozens & Maynard, 4-6 Wood St., Toronto.
Dominion Flow Meters, Ltd., Toronto.
Hart Battery Co. Ltd., Montreal.
Hercules Bumpers, Ltd., 4 Spadina Ave., Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
Lamontagne, Ltd., Montreal.
Northern Electric Co., Montreal, Que.
Pasznicki Bros., 21 Richmond St. W., Toronto.
Shaw Auto Salvage Parts Supply Co., Toronto.
The Canadian Raybestos Co., Peterborough, Ont.
White & Thomas, Toronto, Ont.

AUTOMOBILE LENS
Garage Supply Co., 23 Richmond St., Toronto.
Keyes Supply Co., Ltd., Ottawa, Ont.
McKee Glass Co., Jeanette, Pa.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE BOOKS

AUTOMOBILE TIRES
Ames, Holden, MacCready, Montreal.

BARN EQUIPMENT

BEAN MACHINERY
John Deere Mfg. Co., Welland, Ont

BEET MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

BEARINGS

BINDERS
Birdsell Mfg. Co., South Bend, Ind.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING
The Canadian Raybestos Co., Peterborough, Ont.

BATTERIES
Canadian National Carbon Co., Toronto & Winnipeg.
Hart Battery Co. Ltd., Montreal.

BUYING GUIDE
Canadian Machy. & Mfing. News, Toronto.

CARRIAGES

CREAM SEPARATORS
De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS
Joliette Castings & Forgings Ltd., Montreal and Joliette, Que.

CORN HARVESTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

CORN MACHINERY
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey-Harris Co., Ltd., Toronto.

CULTIVATORS
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey-Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
Weed Harvester Co., Belleville, Ont.

CUTTERS
Butterfield & Co., Inc., Rock Island, Q.

DAIRY SUPPLIES
DeLaval Dairy Supply Co., Peterboro.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

DIES
Butterfield & Co., Inc., Rock Island, Q.

DISCS

DITCHING MACHINES

DRILLS, TWIST
Butterfield & Co., Inc., Rock Island, Q.

DRILLS, GRAIN
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

ELECTRICAL EQUIPMENT
Northern Electric Co., Montreal, Que.

ENGINES
Gilson Mfg. Co., Ltd., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

ENSILAGE CUTTERS
Gilson Mfg. Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

FEEDERS
John Deere Mfg. Co., Welland, Ont.

FARM MACHINERY
Birdsell Mfg. Co., South Bend, Ind.
Cockshutt Plow Co., Brantford.
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Link Mfg. Co., Portage La Prairie, Man.
R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

FEED CUTTERS

FENCE POSTS
Burlington Products, Ltd., Hamilton.

FENCING
Burlington Products Ltd., Hamilton.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

GRINDERS
Gilson Engine Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
S. Vessot & Co., Joliette, P.Q.

HARROWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

HAY LOADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.

HAY RAKES
John Deere Mfg. Co., Welland, Ont.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.

HAY CARRIERS

HAY PRESSES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HULLERS (Clover)

LENS
Garage Supply Co., 23 Richmond St., Toronto.
Keyes Supply Co., Ltd., Ottawa, Ont.
McKee Glass Co., Jeanette, Pt.

LIGHTING SYSTEMS
R. A. Lister Co. (Canada), Ltd., Toronto
Northern Electric Co., Montreal, Que.

LIME AND FERTILIZER SOWERS
John Deere Mfg. Co., Welland, Ont.

LUBRICANTS
Canadian Oil Co., Toronto.
Spedolene Refining & Mfg. Co., Montreal.

MACHINE TOOLS
Windsor Machine and Tool Works, Windsor.

MANURE CARRIERS

MANURE SPREADERS
Gilson Engine Co., Guelph, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

MARINE FITTINGS

MOWERS
Cockshutt Plow Co., Brantford, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MILKING MACHINES
DeLaval Dairy Supply Co., Peterboro.
R. A. Lister Co. (Canada), Ltd., Toronto

MILLING CUTTERS
Butterfield & Co., Inc., Rock Island, Q

OILS
Canadian Oil Co., Toronto.

PISTON RINGS
Burd High Compression Ring Co., Rockford, Ill.
Lamontagne Ltd., Montreal, Que.

PLOWS
Cockshutt Plow Co., Brantford.
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER AND LIGHT EQUIPMENT
R. A. Lister Co. of Canada, Ltd., Toronto.
Northern Electric Co., Montreal, Que.

POWER MACHINERY
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER SWITCHBOARDS

POTATO MACHINERY
John Deere Mfg. Co., Welland, Ont.

PULVERIZERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

PULPERS

RAKES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAPERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAMERS
Butterfield & Co., Inc., Rock Island, Q.

ROLLERS

ROLLER BEARINGS

SCUFFLERS
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John Deere Mfg. Co., Welland, Ont.

SEEDERS

SCALES

SCREW PLATES
Butterfield & Co., Inc., Rock Island, Q.

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SILO FILLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SOCKET WRENCHES

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De Laval Co., Ltd., Peterborough, Ont.
R. A. Lister Co. (of Canada), Ltd., Toronto, Ont.

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John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can Ltd., Hamilton, Ont.

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Russell Gear & Machine Co., Toronto.

SPRINGS
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STARTERS
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STAMPINGS
Geo. C. Baddon & Partners, 45 Chancery Lane, London, Eng.

TELEPHONE APPARATUS
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TRACTORS
Cleveland Tractor Co., Ltd., Montreal.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
J. I. Case Threshing Machine Co., Inc., Racine, Wis.

TRACTOR PLOWS
Cockshutt Plow Co., Ltd., Brantford.
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

TOOLS
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THRESHERS
Birdsell Mfg. Co., South Bend, Ind.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
J. I. Case Threshing Machine Co., Inc., Racine, Wis.
R. A. Lister Co. (Canada), Ltd., Toronto
Gilson Mfg. Co., Guelph, Ont.

THREAD CUTTING TAPS
Butterfield & Co., Inc., Rock Island, Q.

TIRES
Ames, Holden, MacCready, Montreal.

TWIST DRILLS
Butterfield & Co., Inc., Rock Island, Q.

TRUCKS
Eastern Canada Motor Truck Co., Ltd., Hull, P.Q.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Ruggles Motor Truck Co. Ltd., London, Ont.

WAGONS
International Harvester Co., of Can. Ltd., Hamilton, Ont.

WATER BOWLS

WIRES AND CABLES

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There is only one quality point you need to watch in buying drills, taps, dies, reamers and milling cutters, and that is to see that the name "Butterfield" is stamped on each tool.

Butterfield Quality has been for so long an actual accomplished fact—a reliable "something" that isn't found in other tools—that workmen who are particular insist on "Butterfields."

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Union Twist Drill Co.
ROCK ISLAND, QUEBEC

Toronto Office : 220 King Street West
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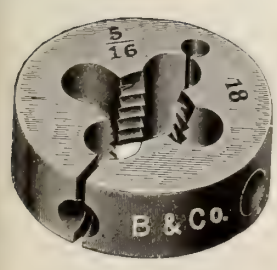
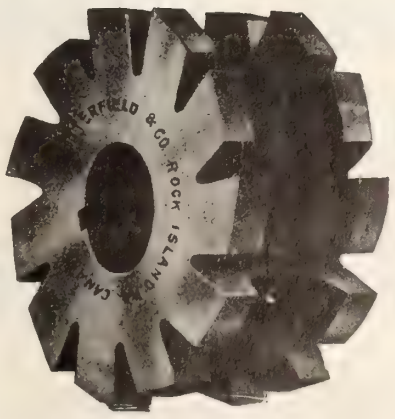
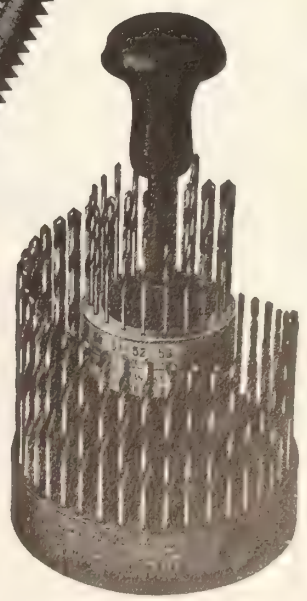






Sell the line already half sold

LISTER
Farm Machines
Have 25 Years Behind Them

For a quarter of a century we have been hammering home the reputation of the Lister line for thoroughgoing, British dependability. We have been "driving the nail" all these years. All we ask dealers to do now is *Clinch it!*

Close the sale. A word or two when opportunity offers; a circular or a booklet; a visit to the farm; a demonstration in your store—a steady "tap-tap"—that's the way to clinch profitable sales. We'll help you. Write us for literature and our agency proposition for 1921.

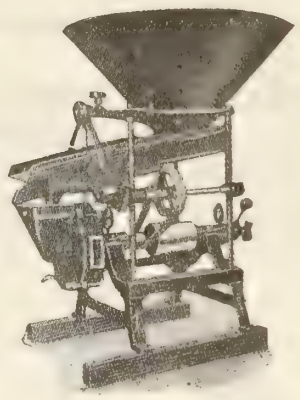
Lister Lines Include:

The Melotte Cream Separator
The Lister Engine
The Lister Milker
The Lister Premier Cream Separator
Lister Silo Fillers
Lister Grain Grinders, etc.

R. A. Lister & Company
(Canada) Limited

Stewart Street (near King and Bathurst), Toronto
or at Wall St. and Portage
Ave., Winnipeg

You can sell anybody who needs a Feed Grinder



There are nine sizes of "Vessot" Feed Grinders—one for every grinding need—from the 6½ inch to the husky 15 inch Mill Type. No matter what demands a customer makes on his grinder, if you handle the

"VESSOT"

Line you are able to give him just what he needs to get the most efficient service.

Remember "Vessot" Feed Grinders are the only ones equipped with the celebrated "Vessot" Grinding Plates, the cleanest cutting and most durable plates on the market. Genuine "Vessot" plates bear the trade-mark "S.V."

Any branch of the International Harvester Company will supply you with details of the liberal "Vessot" Agency Plan.

TRADE MARK S.V. REG

Invented and Manufactured by

S. Vessot & Co., Joliette, Quebec

Sold excusively in Canada by
International Harvester Co., of Canada, Limited
Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John.

Dairy *and* Household Supplies

SWEDISH SEPARATOR CO. EXPANDS

THE Swedish Separator Co., Montreal, which started in Canada a little over a year ago with its own organization, has made progress and expanded so that larger quarters have become necessary. On May 1 this concern moved into new quarters at 36 Notre Dame street, Montreal, which give three thousand feet more floor space. In addition a large repair and assembling shop on Grey Nun street is fitted up to handle all dealers' and customers' repair requirements. The company has also secured this year larger warehouses at Toronto and St. John, N.B.

CARELESS HANDLING OF MILKING MACHINES

IT has been complained of the milking machine by farmers that it tends to inflame the udders of the cow. In practically every case when using a milking machine this condition is caused through carelessness on the part of the operator. Some dairymen think that a machine ought to work well even if it is not looked after. Other men operate their machines with a leaky hose and expect best results. By gently massaging the udders before attaching the machine, generally speaking, there will be no danger of inflamed udders.

Dealers will find it to their advantage to enquire into this occasional complaint regarding the milker, and to see what they can do to educate their customers to the proper methods of operation.

FARM LIGHT MERCHANDISING

THE power farming dealer who handles a good lighting plant will do well to make it known that he is doing so. By advertising in the local papers he should endeavor to educate his prospects to the advantages of electricity on the farm. There is a keen desire in the heart of every farmer to have his place well lighted with a clean and safe equipment, and no better equipment for the purpose has been devised than the individual farm lighting plant.

In rural districts where property owners are far removed from the protection of modern and adequate equipment for fighting fire, the safety that a lighting system offers is of special significance and is an argument which the dealer can use to advantage in his advertising and sales talk.

While the fall of the year is generally recognized as being the best time to push the sale of farm lighting plants, there are several reasons why the dealer should sell them just now.

In the heat of the summer, when the farm wife is washing or churning in the old-fashioned way, the superior convenience of the electric method over the strong-arm method is easily demonstrated to her. The dealer can make a strong appeal to the farm wife by showing how the comfort and convenience of the home are enhanced by the use of electricity. Time and labor are saved for everyone, and the drudgery removed from the housekeeper's duties. There is no difficulty about proving the lighting plant to be a saver of time and labor.

Records have been collected by farm papers and by lighting plant manufacturers which prove that a plant, the power of which is applied only to washing, ironing, pumping, chores, churning, separating and sweeping, with the time added which is saved by the elimination of lamp cleaning, amounts, on the average to about 21 hours a week. This, figured at 50 cts. an hour, amounts to $10.50.

TO HELP THE FARMER'S WIFE

ANY farm that can afford a silo can afford a bathroom and septic tank sewage disposal system. Any farm that can afford a cream separator can afford a washing machine. Any farm that can support pumping and storage facilities for the livestock can afford running water, hot and cold, in the house. Any farm that can justify binders, silage cutters, hayforks, pumping engines, shredders, side-delivery rakes, corn harvesters, potato planters and finely equipped barns can afford every modern convenience for making the home a good place for women to live, work, rear children and develop in them the love for farm life.

THE GAINADAY ELECTRIC WASHER

THE Gainaday electric washer and wringer, manufactured by the Pittsburgh Gauge and Supply Co., Pittsburgh, Pennsylvania, is featured by an unusually complete enclosure of working parts and the use of a friction drive or safety clutch between the motor and the rest of the mechanism.

With the exception of the wringer the construction is all of metal. The frame is built of steel angles and flat sections and is mounted on substantial double-wheel casters. Tub is of copper or of galvanized iron as ordered. The washing mechanism is of the revolving and reversing cylinder type. Although the cylinder rotates first in one direction and then in the other, causing the suds to be washed gently through the fabrics again and again, the control device is so arranged that the cylinder always stops with the cover upward.

PAID
PAID
PAID

Double Sales Possibilities

The De Laval Separator
The De Laval Milker

The De Laval Separator has been a great money maker for agents who have sold it. The leader in its field, a wide demand, universal satisfaction in use, backed by the most aggressive sales effort, the most consistent advertising, and the last word in service, have made the position of the De Laval Separator in a sales way impregnable. It is the "backbone" and the "bread and butter" of many a merchant's line.

Now the De Laval Milker offers just as great possibilities as the De Laval Separator. It is just as superior to all other milkers as the De Laval Separator is to all other separators. Wherever it is in use owners have nothing but praise for it. It is a better way of milking and no dairyman can afford to be without it.

Get in touch with us if we are not adequately represented in your community.

THE DE LAVAL COMPANY, Ltd.
MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

Sooner or later you will sell the

De Laval

Cream Separator or Milker

The experience of building 70,000 motor trucks is behind the Canadian Made RUGGLES TRUCKS

Frank W. Ruggles and the corps of engineers and designers associated with him in this Canadian enterprise have built and sold more than *70,000 motor trucks* during the past seven years.

STANDARD UNITS

Continental Red Seal Motors
Clark Internal Gear Rear Axles
Brown-Lipe Transmissions
Stromberg Carburetors
American Bosch Magnetos
Extra Heavy Hydraulic Pressed Steel Frames

STANDARD MODELS

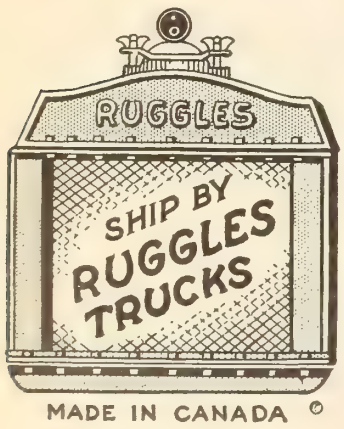
RUGGLES Model 3, 1½ Ton, Chassis, Seat and Solid Tires - - - $2,845

RUGGLES Model 4, 2½ Ton, Chassis, Seat and Solid Tires - - - $3,695

RUGGLES Model 5, 3½ Ton, Chassis, Seat and Solid Tires - - - $4,875

F. O. B. LONDON, ONT.

RUGGLES 1 Ton Rapid Delivery



MADE IN CANADA ©

$2,300

F.O.B. LONDON, ONT.

equipped with standard express body, canopy top, pneumatic cord tires, electric lights, electric starter and horn, full length running boards and rear mud guards

"There's a RUGGLES for every purpose"

Address all correspondence to Dept. 6

RUGGLES MOTOR TRUCK COMPANY, LIMITED, LONDON, CAN.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

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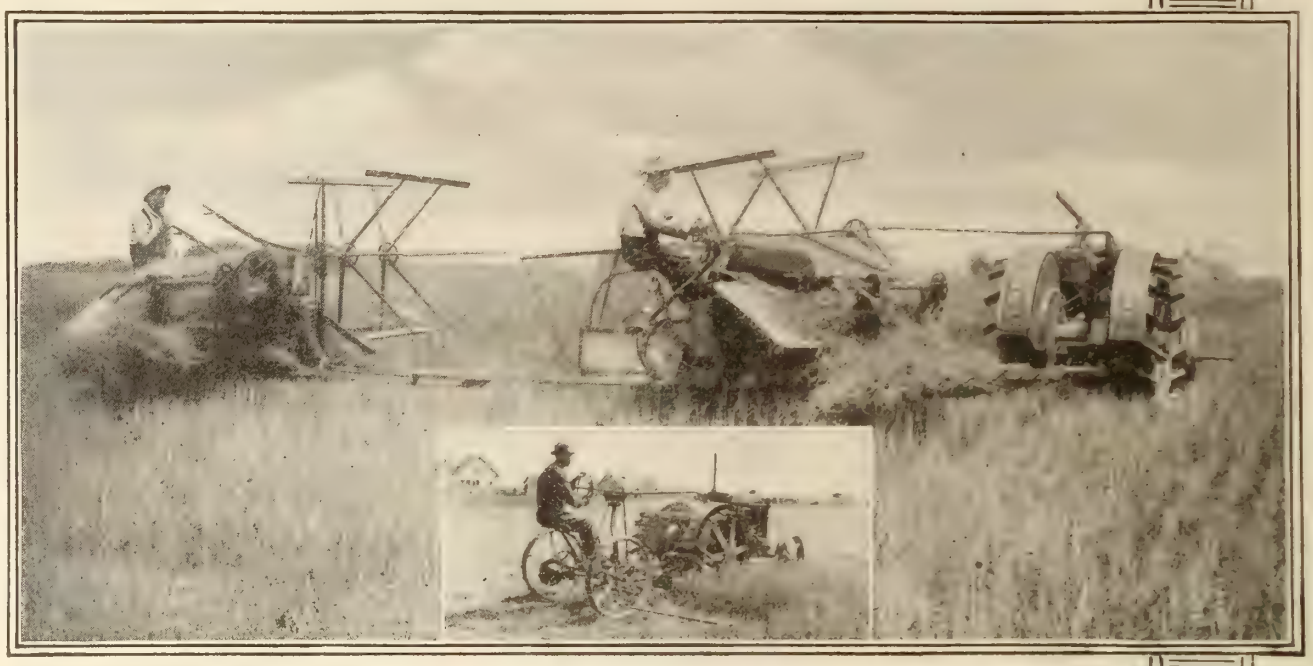
VOL. III, No. 6 TORONTO, JUNE, 1921 Subscription Price $2.00 Per Year

Look for The Silver Edge

RAYBESTOS BRAKE LINING is strong, sturdy, dependable and built to withstand heavy duty. For trucks and tractors, as well as passenger cars. Raybestos stands up under the most severe conditions, rendering complete efficiency at all times.

THE CANADIAN RAYBESTOS CO., LTD.

Peterborough Ontario Canada



In The Heat of Mid-Summer

BETWEEN the season of heavy spring work and threshing time, when the farmer is chiefly interested in haying and harvesting, an excellent opportunity exists for selling *Case Kerosene Tractors*.

Equipped with the Case Extension Tractor Control, which can be attached easily to any Case 10-18 or 15-27 tractor, the farmer can drive either one of these machines from the seat of his mower or binder. This attachment does away with the necessity for an extra man when horses are displaced by tractor power on such work. With a *Case Tractor* it is possible to pull two or more mowers or binders at a time. The hottest weather does not affect the efficient, economical operation of Case Kerosene Tractors.

Show your customers how it is possible to speed up haying and harvest with the aid of a Case Tractor—get the hay cut, cured and under cover, and the grain harvested while the crop is right and the weather favorable. *Every farmer knows the possible crop disaster that lurks in delay.*

Aside from haying and harvest, there is always the horse-killing job of summer-fallowing waiting to be shouldered by *Case Tractors*, and such other tasks as field cultivating, in localities where it is practised, discing, and road work. Make the most of the opportunities for mid-summer sales of Case Tractors.

J. I. Case Threshing Machine Company

Dept. F215 **Racine,** **Wisconsin**

Factory Branches

Alta., Calgary—Edmonton
Sask., Regina—Saskatoon
Man., Winnipeg—Brandon
Ont., Toronto

CASE

TRADE MARKS REG. U.S. PAT. OFF. AND IN FOREIGN COUNTRIES.

KEROSENE TRACTORS

Factory Branches

Alta., Calgary—Edmonton
Sask., Regina—Saskatoon
Man., Winnipeg—Brandon
Ont., Toronto

THE DIGGER GETS THE GOLD

Nature provided vast stores of mineral wealth for mankind. She placed quantities of gold, silver, iron, nickel, tin, platinum, mica, and coal in various continents, where they have lain for centuries awaiting the coming of the day when each would take its place in the commerce of the world. But they are down in the earth and down there they must stay until someone digs them free.

In every field of endeavor there are hidden possibilities which can be uncovered and turned into profit by all who realize that a little extra effort brings results.

Soon in your district, the farmers will be at their harvesting. Massey-Harris Haying Machines, Grain Binders, Corn Harvesters, Ensilage Cutters, and Bain Grain Wagons will be used, discussed, and bought. There will be a harvest of sales for the man who is prepared to grip the shovel a little more firmly and dig right in—so dig for prospects, dig for sales, and keep on digging until you have unearthed every sale in your territory.

Tell your farmer friends how Massey-Harris Implements make good farming easy; tell them of the years of work our machines do; and tell them of the speedy, dependable service that we can give them. Now is the time to do it and remember, the digger gets the gold.

MASSEY-HARRIS COMPANY, LIMITED

Established 1847

Head Office - - Toronto, Ontario

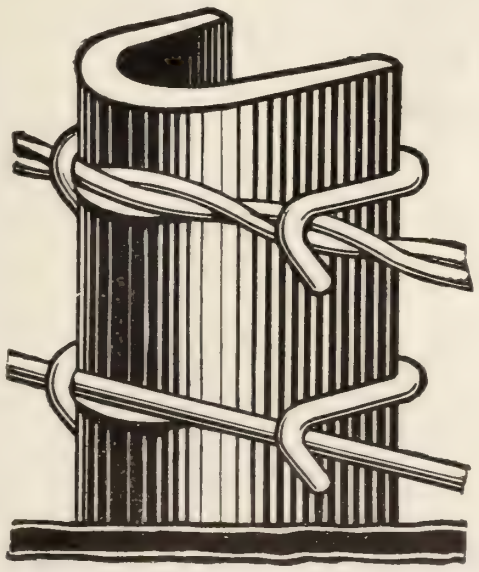
Burlington Steel Posts Have These Sales-Compelling Features

No holes to dig nor filling in.

Absolutely fireproof.

Wire easily attached.

Cheapest in the long run.



3 times the life of wooden posts.

Strength to withstand any farm strain.

Won't sag or heave.

Trim appearance.

Now you can understand why farmers are so interested in these posts. Let us send you full particulars.

BURLINGTON PRODUCTS LIMITED

316 Sherman Avenue North - - - HAMILTON, CANADA

15 minutes to rebore a cylinder with this tool

—and you make a better job than by any other method—the same accurate job, in fact, that is done in the factories of the Ford, Dodge, Studebaker, Buick, Paige, Detroit, Chalmers, and other makers of cars and trucks. These concerns recommend the

UNIVERSAL CYLINDER REBORING TOOL

as standard garage equipment, and back up their recommendation by using "Universals" in their own shops.

Mr. Garage Owner, stop to consider for a moment the possibilities for profit that lie in having a department of your own for this work instead of having to ship to the factory. Isn't it worth investigating? Ask the next salesman who calls on you from any one of the firms mentioned here.

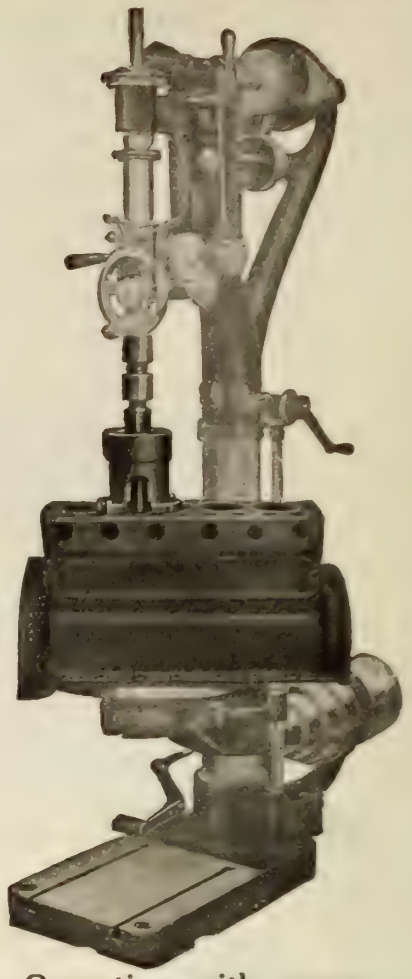
Wilkie

We believe the only two rings that give genuine satisfaction are "Wedding" and "Wilkie."

We make the "Wilkie" and can guarantee that the satisfaction will be lasting.

Uinversal Reboring Tools and Wilkie Piston Rings are made by

Windsor Machine and Tool Works
312-316 Pitt Street West, Windsor, Ontario



Operating with power-driven drill press

The following distributors of the Universal Cylinder Reboring Tool also sell and recommend "Wilkie" Piston Rings:

Aikenhead Hdwe. Ltd., Toronto.
Border City Auto Supply Co., Windsor, Ont.
Canadian General Electric Co., Limited—All branches.
Great West Saddlery Co., Ltd., Winnipeg.
General Supply Co. of Can., Ltd., Winnipeg.
Inter-Ocean Auto Co., Ltd., Montreal.
Marshall Wells Co., Ltd., Winnipeg.
Maclin Motors, Ltd., Calgary.
John Millen & Son, Ltd., Toronto.
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Motor Products, Ltd., Winnipeg.
Wood-Vallance, Ltd., Winnipeg.
Wood, Alexander & James, Hamilton.
The J. H. Ashdown Hdwe. Co., Ltd., Winnipeg.
Bowman Bros., Ltd., Saskatoon and Regina.
The Chapin Co., Calgary.
Great West Electric Co., Ltd., Winnipeg.
Hyslop Bros., Ltd., Toronto.
Keyes Supply Co., Ltd., Ottawa.
Marshall Wells Alberta Co., Ltd., Edmonton
Motor Car Supply Co., Ltd., Calgary.
Western Motor Supplies, Regina.
Wood, Vallance & Adams, Ltd., Calgary.
Wilkinson-Kompass, Ltd., Winnipeg and Hamilton.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 | TORONTO, JUNE, 1921 | Number 6

The Future of the Tractor Industry

The Successful Farmer Who Uses a Tractor, on the Basis of Results Secured, Will Soon Establish the Tractor Beyond All Controversy as an Essential on the Modern Farm

WE hear a great deal of discussion nowadays about the practicability of tractors on the average Canadian and American farm, says Alex. Legge, vice-president and general manager of the International Harvester Co. With a decline in the price of horses and feed and the reduced purchasing power of the farmer by reason of the low price of farm produce generally, many people are discussing the tractor as an extravagance. However, conditions such as we are now passing through may prove to be of real and lasting benefit to the tractor industry and it will be found that the efficient, durable, well-built tractor has a permanent place as part of the equipment of the successful farmer.

It is a well-known fact that the average yield of farm crops in this country is far below yields obtained from much less fertile soil in other countries. The Canadian and American farmer has always been handicapped in the work of better cultivation of the soil by the high cost of his labor compared with similar labor in other countries where much greater yields are secured.

Farmer's Problems

Many of the principal problems confronting the farmer are not greatly different from those confronting the manufacturer or merchant. The farmer, like the manufacturer, must first produce a sufficient output to pay the carrying charges of the operation before there is any profit to figure. The investment in property, labor, interest on borrowed money, taxes and upkeep must first be met before any profit can be figured for the owner of the operation, be it farm or factory. The profits accrue from whatever is produced in excess of the amount required for these different charges and in the case of the farmer it is the last bushel or the last few bushels per acre that are produced that indicate the net profit to the producer. The closer the margins are the more carefully we must figure to get the maximum output from each acre of land on the farm and each foot of floor space in the factory. In manufacturing operations the mere fact that business is dull and that we are selling goods in many cases for less than it actually costs to produce them is an added incentive to the successful manufacturer to install better machinery and work out better methods of production in order to bring down the costs to a figure that will wipe out the loss and leave a margin of profit. The same is true of the farmer, and the tractor of the future will occupy much the same place in farm production that automatic machines do in the factory, representing a larger initial investment but paying returns in the extra output produced.

The Tractor's Efficiency

Most farmers are firmly convinced that to get the best results the soil should be plowed in the summer and fall, as soon as possible after the season's crop has been removed, and ninety-nine out of every hundred of them you meet will express the determination to do their plowing a little deeper than they have been doing it in the past. However, to do this when the ground is dry and the weather hot usually proves too severe a task for the horses. If the team becomes over-heated the plow is let out of the ground a notch and perhaps later on another notch, until the good resolution to do the job better than in the past gives way to the practical difficulty which the average farmer faces who operates with horse power. There the tractor demonstrates its efficiency. Hot weather and the heavy load does not injure it and there is no disposition on the part of the farmer to ease up the task out of sympathy for his team. The added yield per acre because of this better and more timely preparation of the soil for the coming season's crop will not only pay the carrying charges on the tractor but help to make the farm as a whole a more profitable operation.

Again, the farm tractor in the future will be used more and more for belt work during the fall and winter months and threshing, shelling, feed grinding, sawing wood and many jobs that are now done by stationary engines will be handled by the general purpose tractor.

When seeding or planting time arrives the tractor will again demonstrate its worth on the great majority of farms. The work can be done so much more quickly that it is not necessary for the farmer to "mud in" the crops, for when the time arrives that the soil is in the best condition for planting he can very quickly disk or harrow the land, whichever is required to put it in the best condition for seeding, and he can do the seeding so quickly as to give the crop a start on the weeds that has never been possible under the slower process of doing things.

The tractor question will be settled by the successful farmer on the basis of the results secured and he will soon learn to figure it not on what it costs him to cultivate an acre of land, but on what the results are from such cultivation. With the added facilities of doing the work better at the right time afforded by the use of the tractor this machine will soon be regarded as one of the essential elements of the successful farm.

Harvesting on the prairie is often an elaborate affair. Here is a huge steam tractor operating four binders.

Who Is a Tractor Prospect, and Why?

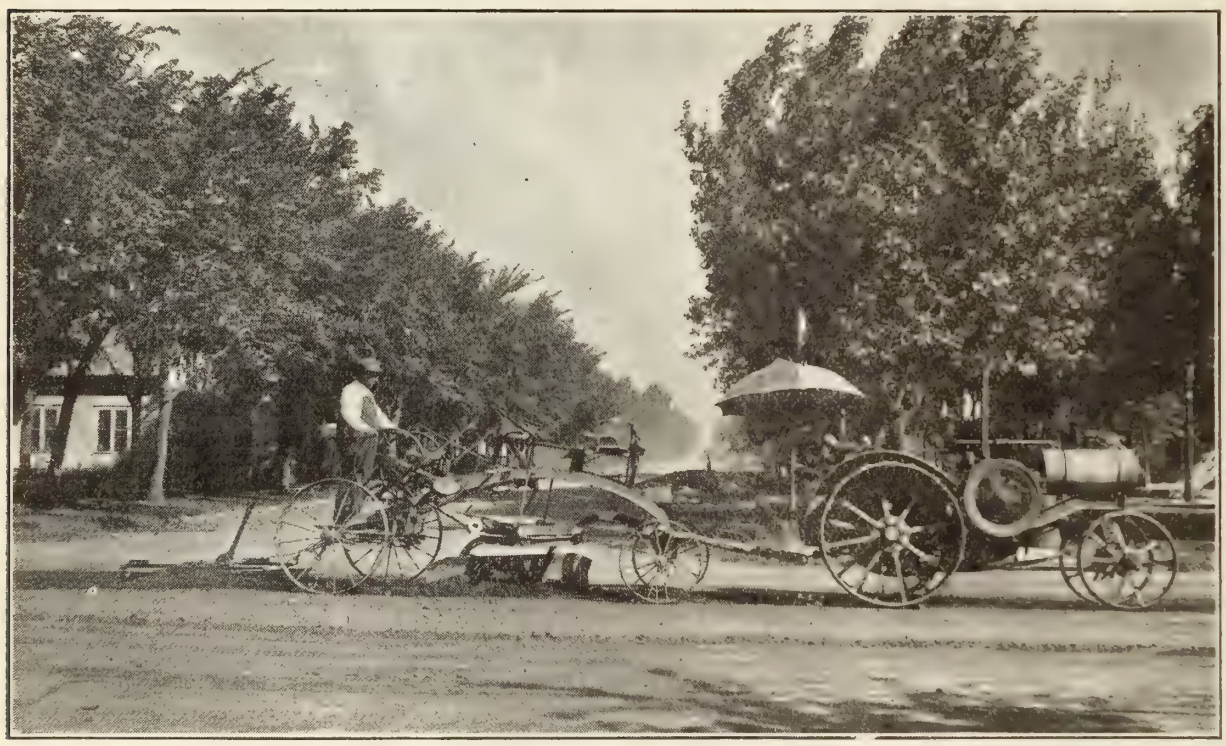
This Year the Dealer Has to Comb His Territory More Thoroughly for Tractor Prospects Than in Former Years—There Are Several Points in This Article Which Will Assist the Dealer in Locating Prospects

By ARNOLD P. YERKES

EVERY tractor dealer has learned that the season of 1921 varies from that of 1920 largely by the fact that this year there are very few farmers who are seeking the implement dealer to beg for a farm tractor. Tractors must be sold this year. There are very few being bought. A year ago most dealers were more interested in getting a sufficient supply of tractors to meet the demands of farmers who had come to them to buy than in seeking tractor prospects, while this year it is principally a question of locating the possible prospect and going out and selling him.

Tractors are being sold this year in spite of all the reports about conservation on the part of farmers, lack of money, etc. The dealers who have combed their territory and canvassed every possible prospect are finding quite a good many farmers who can be induced to buy a tractor and who will really profit by such purchase more than they would profit by holding off for another season or two.

Doing without a labor or expense-saving machine which one really needs often costs more than the price of the machine itself. Putting off buying something which is really needed often means that the article is paid for two or three times over and even then may not be owned. It is easy to pay for something you never own, easier than most people think. There are three ways in which it can be done. First, by the method already mentioned, of doing without a machine which is really needed and which would save or earn money if bought. There were thousands of examples of this last year, of which the following is quite typical.



The tractor demonstrating its usefulness in roadmaking

Paying For Something, Yet Not Owning It

A wheat grower recently remarked to a friend that he had paid $3,000 for a threshing outfit last year, but never got it, while this year he was going to pay for the machine and get it and that it would pay for itself before the season was over. What he meant was this: Last year he had no threshing outfit of his own and had decided not to buy any for another season, but to have his threshing done by a custom rig. The custom outfit, however, did not get to his job until rather late, and in the meantime the price of wheat had gone down so much that when he figured up the difference in the price he received for his wheat and that received by his neighbors who did their own threshing and marketed their grain early, he found that waiting for a custom outfit had actually cost him $3,000—more than enough to pay for an individual threshing outfit, and yet he did not have the machine. This season he placed his order early and will pay for the thresher when he gets it. He feels confident that by being able to get his crop on the market early the thresher this year will bring him enough more than he would otherwise get, to pay for itself, in addition to having a better job of threshing done and done at less expense.

Folly of Buying Machines Not Complete

Another way in which a man may pay for something he never owns is by purchasing an article which is incomplete and which will not do as much work as a machine which was more complete. This applies to many machines, including tractors. For example, many men have bought tractors which had no governors and had only light flywheels, which makes them entirely unsuitable for use in threshing and most other belt jobs. The thing which appealed to them was the low price of the incomplete tractor; they failed to consider the service it would give as compared with a more complete machine. Many of these men, when threshing time came, had to allow their own tractor to stand idle while they hired an engine to come and do their belt work. They often paid out in one season, in the hire of these custom rigs, more than the extra amount which a complete tractor, which would have done all their work, would have cost them. Hence, they actually paid for a complete tractor, but didn't get it.

The third way in which many people pay for something they never get is by buying articles of inferior quality. This, too, applies to almost any kind of an article, and a tractor is no exception. An engine in which quality has been sacrificed in order to obtain a low selling price is like most inferior articles—that is, it is more expensive than the high-priced article of good quality, which, by longer life, and better service during its life, is the most economical in the long run. A cheaply constructed tractor will wear more rapidly and hence the replacement charges are high. It will use more fuel and oil in operation because it doesn't have enough piston rings, or the machine work has been of poor quality and the rings soon wear. Hence the operating costs are high. Unnecessarily heavy repair or operating costs make a cheap machine cost more in the long run than a machine of better quality, which would give better service at less expense. The slight saving in the first cost is nearly always much more than offset by the high costs later on, and in paying extra repair bills and operating costs the owner is paying more than good construction would have cost him in the first place, and still he doesn't have it.

Tractor Prospects

These three examples illustrate three classes of tractor prospects, of which the first is by far the largest. Due to the present financial conditions among farmers, many have concluded that it will be best for them to spend as little as possible and buy nothing which they do not absolutely have to purchase. This is frequently a serious mistake. It will cost just as much this year to do without a machine which is really needed as it costs any other year, and the expense of doing without a machine or the loss of the larger crop which might be planted and harvested with a tractor will frequently mean several times any possible saving which may be effected through a reduction in the prices of tractors another year. This saving is entirely problematical and cannot at best be very large, as the prices of tractors have never risen much above pre-war levels and have already been lowered somewhat. Quite a good many farmers who have taken this attitude have been discovered by tractor dealers, convinced that they were assuming a wrong attitude, and have bought a tractor for use this season. Many of these, of course, had the advantage of using their machines for the spring work. However, there are still a great many who can yet make the tractor pay during the harvest season and for the fall work and who could be sold if the matter were presented to them properly. It is up to the dealer to get in touch with the farmers in his territory who are in this class and to convince them that there is no better time to buy a good tractor than right now, and that postponing the purchase is likely to be an unprofitable proposition.

Farmers Are Able to Buy Tractors

Of course, a tractor cannot be sold to a man who doesn't have the money to pay for it, or, at any rate, the wise dealer doesn't want to sell a tractor to this kind of purchaser. There is plenty of proof, however, that there are a great many farmers who are amply able to purchase tractors, so far as the financial end of it is concerned. In spite of the complaints on the part of some farmers of the prices they have received (and such complaints are undoubtedly largely justified), the fact still remains that a great many farmers sold their crops at fair prices and have the money or collateral with which to purchase tractors if they were convinced that it was to their interest to do so.

Probably, on the whole, more farmers of this class will be found among the grain growers than anywhere else. Furthermore, the tractor is particularly well suited to grain growing conditions. However, its usefulness and value is by no means confined to this type of farming and there are many men who are operating dairy farms or farms of the general type who can use a tractor to advantage this fall and who have been fortunate in not feeling the declines in prices of their products to the extent of some other farmers.

Profit in Careful Trading of Second-Hand Tractors

There have already been a good many tractor sales in this country this year and quite a good many of them have been of the nature mentioned in the second example above mentioned. Some of the low-priced, incomplete tractors have now been used for two or three seasons and the owners have learned that they made a mistake in not buying machines with power enough to do their belt work and with a governor and heavy flywheel, both of which are essential for satisfactory belt work. These farmers are excellent prospects for a dealer who is handling

an all-round farm tractor. The dealer who is equipped to do repair work may sometimes find it advantageous to trade in some of these machines at satisfactory figures, have them overhauled and sell them second-hand at low prices. There are men who will buy second-hand machines at a low figure who do not care, or who cannot afford, to buy a good quality machine at the regular price. This procedure is by no means new, as many dealers have followed it for several seasons and have found that the second-hand machines which they sell can often be replaced a year or two later by a new machine, the farmer having got a taste of power farming and learned the real value of a tractor for his farm work.

The replacing of tractors which have not proved entirely suitable for the work for which they were intended is a phase of the tractor business which the live dealer cannot afford to overlook, for it offers splendid possibilities.

Replacing Unsuitable Tractor

The replacing of low-priced tractors which are costing the owner too much for their repair and operation is also another possibility which should not be neglected. It is seldom that a man who has once given a tractor a trial can be induced to go back to horses, and the man who has bought a low-priced tractor, and who, therefore, in all probability obtained one of poor quality, is often an excellent prospect for a new machine, provided the dealer can convince him that the machine which he handles will operate at less expense than the old one and this is frequently a very easy matter to do.

Tractors Are Being Sold

Taken all together the tractor prospects this year must be located by the dealer, but this situation is not as serious as it might seem at first glance, at any rate not to the dealer who is awake to his opportunities and who is going after the business in an aggressive manner. As already pointed out, tractors are being sold this year. They are not being sold, however, by the men who sit behind their counter waiting for tractor prospects to come in and order tractors. That condition is a thing of the past and probably will not prevail again for some years. But the tractor dealer who combs over the farms in his section, picks out the men who can use tractors to advantage, and proceeds to canvass them carefully, is reaping fair rewards for his efforts. An example of each of these types of dealers was brought to light recently in a small town. A tractor dealer was interviewed for the purpose of finding out how the tractor business was in that section. He stated that there was no such thing as tractor business, that the farmers did not have money and would not buy tractors. When asked if he had done any canvassing, he replied that he had not and it would be entirely useless. He was interrogated as to whether other tractor dealers in his town had sold any machines and he was very emphatic in stating that they had not and there would be no tractor business in that community this year. The interviewer then visited another tractor dealer in the same town. He stated that tractor business "came hard," but that there was some to be obtained, that he had already delivered three tractors and that he had several other good prospects. This incident occurred several weeks ago and probably by this time the second dealer has delivered several other machines to the prospects with whom he was working. The same experience occurred in two or three other towns in that region and it is undoubtedly fairly typical of a great deal of the country.

Dealer's Signs, Samples and Service

The Farm Implement Dealer in His Scramble to Make Sales Often Fails to Give Due Attention to Publicity—This Article Points Out the Benefits to be Derived From a Judicious Use of Signs, and Hints About Displaying Samples, Etc.

By R. S. WILLIAMS

INVESTIGATION discloses but one business that makes money consistently without advertising—the Government Mint. Notwithstanding the fact that it is not necessary for the Mint to carry space in the daily papers, visitors to this historic institution experience no difficulty in locating the place, because of the large sgn emblazoning the entrance.

Yet every little while we run across a retail implement dealer—a man whose business depends upon the number of voluntary buyers he can attract to his establishment—who thinks so little of his name and his calling that he will not go to the expense or take the time to designate his store or warehouse with a neatly lettered sign. It is not so uncommon as one might imagine to find implement stores without a vestige of a sign or a name plate upon them. Considering that most big implement manufacturers will supply dealers with attractive warehouse signs in a variety of sizes, sometimes with a supplementary board showing the firm name, failure to use any kind of a sign at all is indicative of narrow-minded penuriousness or laziness of the most malignant type.

Perhaps we should adopt a more charitable attitude and attribute the neglect of signs by some dealers to ignorance of their real value. Occasionally a dealer really believes it to be unnecessary to display his name on his place of business; believes that all the farmers in his community know him well, know where he is located, and know the lines he handles. This latter idea was given a thorough tryout not long ago by the branch manager for one of the large implement manufacturers. In order to convince a dealer that farmers in his community were not so interested in his business as he assumed them to be, this manager delegated two or three of his men who were canvassing the country adjacent to the dealer's town to ask each farmer to name the lines handled by this dealer. The result was a revelation even to the manager. Most of the farmers knew of the dealer, but very few knew even a single trade name that he represented.

Must Keep Goods and Name Constantly Before Public

People are not so interested in us as we think and when it comes to selling goods the dealer must keep conspicuously before the buying public if he would avoid oblivion. Aside from the fact that it is never safe to assume the other man's interest, there is another and even more important reason for displaying one's name and line prominently. Nearly all retail dealers lean more or less strongly towards one or two well known lines. These are displayed and pushed to the exclusion of other minor lines. The manufacturers of these lines are carrying on a consistent advertising campaign to the farm trade. Every farm paper and many country weeklies carry the advertising of these prominent lines, to say nothing of the local sales campaigns put on in the dealer's name. The advertising in the columns of the farm papers ordinarily cannot give the name of the local dealer. The territory covered is too wide. But the dealer can get a direct benefit from this general publicity by designating his own place of business as the local representative for the advertised line. He can tie up his store so closely with the line he sells that when the farmer reads the manufacturer's advertisement in his farm paper he unconsciously thinks of the dealer because he has seen the same line advertised over the dealer's name. The implement dealer who fails to place a big, conspicuous sign on his store to tell his trade what make of machinery he represents is losing the value of his association with the manufacturer's reputation and prestige. He is losing an advantage that could be turned to profitable account.

The fact that we know our own line of machinery to be good and worthy is no reason why we should hesitate to tell the world about it. If we have sold ourselves on the merits of a certain line, the next job is to sell the world. But the world is pretty busy with its own affairs. It doesn't know who we are or whom we represent, and it is too busy to hunt us up to find out. It is up to us to take our line to the world and tell it just how good we are.

You are doing just that when you go to a prospect and sell him one of your machines. You are doing that when you mail or hand catalogues to your customers. You are doing that when you buy space in your local paper and fill it with advertising copy. But what is the use of telling the buying public who you are and how good you are if you don't make it plain where you are. Your store is the manufacturer's counter. It is there he displays his goods. It is there you do your business and sell for profit. If you have arranged your "counter" so that it looks the money and does justice to your line, then by all means mark the building so plainly that any person within a block or two of the place can tell who you are and the line you represent. If it is worth while to put a name plate on the front door of one's residence for the convenience of the mailman, how much more necessary is it to display one's name and line over one's place of business.

The implement dealers of this country are not equipped with warehouse signs to the extent they should be. It may be due partly to the old custom of manufacturers, which has been continued to the present of supplying their dealers with warehouse signs. Retail implement dealers never have had to go to the trouble and expense of painting their own signs, but usually could secure large attractive signs from their wholesalers. Anything that can be obtained free of charge is usually thought little of. Sometimes these stock signs were put up—sometimes they were kicked about and destroyed. Many times they were injured in shipping and being of arbitrary size they frequently did not fit the space where they were placed. Then the cheap paint and sanded surface soon peeled off under the battering of the elements and in a year the sign was of little value, as an advertising medium. Sometimes the free signs never do get put up, but eventually find their way to some chicken house roof or even more humiliating utility.

The result has been to depreciate the value of neat attractive signs in the mind of the average dealer. If he puts up all the signs sent to him by manufacturers, his store soon presents a conglomerate appearance similar to a weather-beaten billboard. The designs of various manufacturers are entirely dissimilar. There is no uniformity of size, shape, or general treatment. To put up signs indiscriminately here and there, wherever a vacant space can be found on the side of one's building, tends to make the structure look patched and down at the heel. It is calculated to drive away rather than attract business.

Then there is the dealer who puts up nothing at all in the way of signs. He leaves it to the imagination of his customers as to who he is and why he is there. These two types of implement dealer with the various degrees between constitute too large a proportion of the total. Why should the retail implement man be dependent on his jobber or wholesaler for his sign any more than the grocer or the shoe man? Is there any good logical reason why a progressive dealer, who expects to stay in business, should not decorate his store or warehouse with a neatly lettered but prominent sign that gives his firm name and the line or lines he handles? Such a sign is made to order and fits the building; it adds dignity and prestige to the business and it draws trade, because it hooks up the dealer locally with the national advertising of the manufacturer. A new warehouse sign makes people look twice. It proves that there is somebody home.

Originally the term "sample room" meant the bar or saloon that was operated in conjunction with

the ancient tavern. Here a different class of "samples" was to be seen and imbibed than usually can be secured in the average implement sample room, but while the old sample room was perhaps a more interesting place to spend one's time in it is doubtful whether it was so profitable to the customer.

Clean, Well Kept Sample Room Necessary

There are still a great many dealers who do not realize the full value of a well kept, well lighted, cheerful appearing sample room. This is evidenced by the careless manner in which some so-called sample rooms are maintained. It is true that many dealers do not have the space to devote to a full display of machines, but after all we are in business to succeed and who is going to be satisfied with a mediocre or partial success? It isn't enough to lie back in one's chair and complain about a shortage of room for samples. The live wire dealer will make room—build room—in some way do what must be done to provide for an attractive display. Surely the man doesn't exist who believes not in a sample room? Does he not realize that people no longer buy with their eyes shut? The sample room answers precisely the same purpose as a show-case in a store. When a man wants to buy a pocket knife for two dollars he wants to see and examine it before he decides, and, although he may not know it, his decision is favorably influenced if the show-case glass is shined up, the shelves clean and the knife lying in green plush. These accessories really do not make the knife whittle any better, but a great many more knives can be sold out of a clean, well kept show-case than out of closed pasteboard boxes on the shelves.

It is just the same with farm implements. A man spends two dollars for a knife and two hundred dollars for an ensilage cutter. Why should he not want to see and examine the ensilage cutter under equally favorable conditions. It is little short of disgrace to lead a prospect back to the warehouse and try to sell him a farm machine that is lying in the original shipping packages. It is an insult to the man's intelligence.

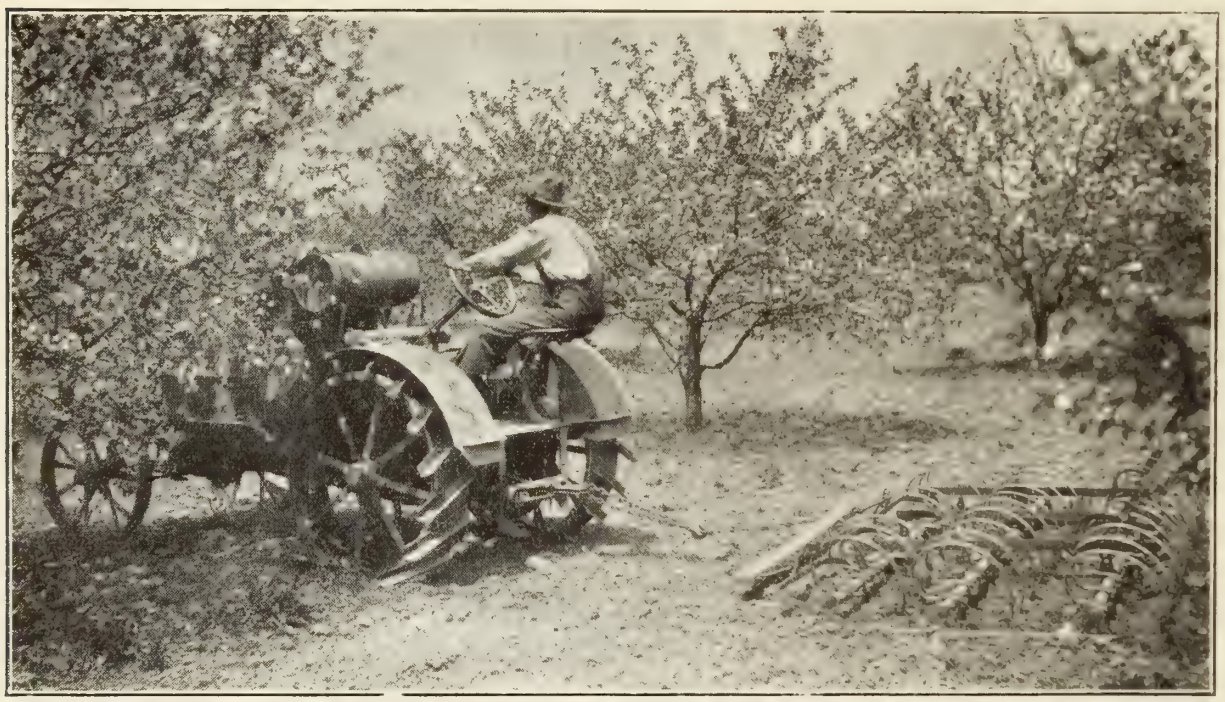
Keeping the Mail Order House at Bay

Some dealers do not quite realize that their sample room is one of the strongest weapons they have for combating the mail order house. The sample rooms provide a place where the prospect actually can see and examine the machine he wants to buy, whereas the mail order catalogue shows him the picture only, with a brief description and the price. It is this latter factor that really gets the business for the mail order house. Low price in conjunction with the joy of sending away brings most of the orders that pour into the coffers of the catalogue house. If the dealer who is on the ground and who possesses the advantage of personal acquaintance with his trade will set up his sample machines, shine them up and oil them until they look well and operate easily, he will have very little difficulty in convincing the average buyer of the superior value of his line. On the other hand, if he cannot show the prospect a complete machine, but expects to sell him a crated implement and quotes a price considerably in excess of the mail order charge, he cannot justifiably blame the purchaser for questioning the wisdom of buying at home.

Live, enthusiastic personality is worth a thousand catalogues of cold type. This is no deprecation of the value of judicious advertising, but the dealer or salesman who will combat the catalogue house with inspiring personal solicitation can keep the mail order trade at a low minimum in his territory. The spoken word with the power of understanding, confidence, enthusiasm, and sincerity back of it, is sufficient to remove the mountains of doubt and suspicion that exist in any rural community. No dealer ever had a soft snap in selling his line to his trade, but he can never make money or increase his business by permitting grass to grow in his yard, dust to accumulate on his shelves, and trash to impede the operation of his sample machines.

Display Seasonable Machines

To the man whose sample room space is limited we can only say, "Set up and display seasonable machines." Prior to the tillage season, set up the plows, disks, stalk cutters and rollers. As the planting season approaches, take down the seedbed makers and replace them with corn planters, drills, seeders, and cultivators. Follow the same program at haying, harvesting, and corn shucking times. It takes labor, time and energy, it is true, but if you are confronted with the problem of limited display space and cannot solve it by building bigger, you can and should show seasonable types. No effort is too great to insure success. If we are in business to succeed and make money we should omit no detail of thought or deed that will assure us of accomplishment—not the halfway success that marks the incompetent, but complete victory that brings both fortune and satisfaction.



The tractor is now as familiar on the orchard as it is on the farm.

Efficient Repair Service

Another factor that is of tremendous importance in conducting a really successful campaign against mail order competition is the right kind of "after sale" service, with everything that all inclusive term takes in. Although the name "service" is applied to a multitude of "helps," both free and charged for, the one phase of dealer service which can be made most profitable to the dealer and at the same time build business is an efficiently conducted repair service. If the dealer is equipped to handle repairs right, he can use it as a powerful argument against catalogue house trade, because it means something to a farmer to be told that in case of break-down he can be relieved quickly and without submitting to the expensive delay that might result from the break-down of a mail order house implement. It does require a more complete stock of repairs than is usually found with the average implement dealer, but the dealer who is working toward real success will readily perceive the necessity of providing adequate repair service covering the lines he handles.

The first requisite to a paying repair trade is a clean, orderly repair stock, neatly binned and labeled. The practice of dumping repair parts promiscuously into a box or barrel will never lead to satisfactory service, because the dealer never knows when he is out of a certain part until it is called for and found missing. Such parts are easy of access to thieves, and the sight of a box of rusty repair parts dumped on the floor is not calculated to inspire a farmer with confidence in the dealer's ability to be of service in case of need.

Repair racks are not difficult to build and if put up neatly and painted a gray color they lend a business-like aspect to the whole store. When such a dealer turns to his stock and tells a prospect that speedy and adequate repair service is available at all times, a man cannot disbelieve the evidence of his own eyes. And when he is told that the dealer's service is more efficient and of more value than that of a catalogue house he will be more ready to believe that also.

Prompt Service

Some sort of arrangement should be made to assist farmers in time of dire need that will prevent them from losing a great deal of valuable time. If a machine breaks down in the midst of haying or harvest, minutes quite frequently mean dollars. If a threshing machine breaks a concave not only the whole operation stops, but there is a crew of idle men to house, feed, and pay. If a dealer can step into a car five minutes after a telephone call and in thirty minutes be on the job with a new part, it is going to make a deep impression upon the owner. The next time he is in the market for any tool, big or little, he will give his friend, the dealer, first choice.

Selecting a representative stock of repairs that will be equal to the ordinary occasion and still not hang on indefinitely without a turnover is not the easiest thing to do. Needless to say no local dealer can keep in stock a complete variety of repair parts for all of his machines. That would require more space than he has to devote, to say nothing of the money involved. It isn't necessary anyway, for a great many parts are seldom called for. A dealer should stock only those parts that are most frequently in demand. The repair man at the manufacturer's branch house can be of immense assistance in case of doubt. He knows what parts are shipped most often to any one territory and his advice is worth a great deal. Naturally the dealer wishes to avoid stocking up with many parts that do not move readily.

Genuine Educational Service

There are other varieties of service aside from the supplying of repairs that make the dealer of real value to his farm trade. These include the assistance to tractor owners in the solution of power problems, belt speeds, pulley sizes, etc. Not one tractor owner in a dozen is really competent to get the best out of his tractor. A good dealer, who keeps thoroughly informed, can be a big help to his customers in this respect.

The subject of seed is of more importance than the average dealer realizes. Many farmers use the wrong kind of seed, import unsatisfactory seed or do not know how to test it to ascertain its fertility. Who, aside from the retail implement dealer has a better right to advise the farmers and grain growers on these important topics? The county agent is available, but in many instances does not possess the confidence of the farmer that the dealer does. The dealer is always on the ground and visiting with his customers each day, while the county agent seldom sees them.

Little hints and pointers about farm mechanics, ways to lighten the burden of both farmer and his wife, will be well received. The dealer who equips himself with practical information that can be passed on will have his reward in increased trade. Every true, progressive implement dealer has within him the desire to do something worth while—to accomplish big things. One of the best ways to build business with a corresponding recognition among the trade of real knowledge is to be of genuine service in the other man's everyday life and in the solution of his everyday problems.

An Accounting System for the Tire Dealer

While This System is Primarily for the Tire Dealer it Follows Broadly the Principle of All Good Systems and Can Easily be Adapted to the General Garage Business

By F. DE HORITY
GOODYEAR TIRE & RUBBER CO.

THE one thought that is foremost in the minds of efficient and aggressive business men to-day is "Do I know all about my business?" In order to attain success, it is absolutely essential that every business man should have some systematic method of accounting in order to know at all times as to how his business is running.

Repairmen often plead that they do not have enough time to keep accurate records, but it is absolutely necessary that they take time to familiarize themselves with, and then utilize some system whereby they may know whether or not they are actually making money.

Accurate bookkeeping is the foundation of good business methods because it furnishes the basis for wise management. If the records are accurately kept, they will point out leaks and enable the dealers to readjust their selling expenses so that profits will be actual at all times rather than imaginary.

Whenever you purchase material, keep every order on some form of stock card or in a stock book. At the close of each day's business the article sold can be entered on the "sold" column of the card. By deducting the amount sold from the amount appearing in the "in-stock" column, you will have at all times a perpetual inventory.

Keep some simple form of day book showing record of each day's sale. Use care that any money received on account be not entered under sales, as you will then have duplicate entries.

In your ledger, keep each customer's account separate. Mail statements each month if you do any credit business. Be sure to record all expenses incurred in the actual operation of your business.

Take a physical inventory at least every two months in order to check up the data on your stock cards. In order to determine your profits, take the value of the stock, that is the cost price of the stock to you, and deduct this from the total purchases made. Add to the remainder the total amount of expense and then deduct the sum of these two from your total sales. The result will be your net profit.

Factors Often Overlooked

There are certain factors in the conduct of his business that are often overlooked by the average repairman, such as depreciation, rent, taxes, insurance, etc., and they are vital and must be taken into account.

By depreciation is meant the gradual wear and tear on your equipment, building, etc. These things are bound to decrease in value from year to year. Suppose, for example, you buy certain equipment for, let us say, $400. Its life is possibly ten years and your annual loss due to depreciation is, therefore, one-tenth of $400, or $40. Dividing this by twelve, the number of months in a year, the depreciation per month would be $3.33, which you will have to figure in determining your profit and loss. The amount of depreciation on equipment is usually greater than on buildings and although your figure will, of course, be approximate, a good average to use is about 5 per cent. annually.

Enter on your journal each month the total amount of depreciation for the month. This will be deducted from the profit each month, and be sure to keep enough reserve to take care of wear and tear.

Taxes, rent, insurance, etc., should all be charged to expense as well as heat, light, equipment, etc.

Do not make your repair charges by a hit or miss process. You have an overhead expense which must be taken into consideration and this will add to the cost of every repair job.

The best way to arrive at the proper charge for overhead on each job is to take the total cost of your repair department for one month. Then sum up all the overhead expenses by themselves, depreciation, personal salary, taxes, etc., and find out just what per cent. each is of your entire repair expense. This overhead percentage must be added to the direct cost of every job.

Then be sure to add a margin of profit. The job ticket system, as illustrated, is one of the best forms to use.

Whenever a piece of work comes in, place a ticket upon it, showing the customer's name and address, size and type of tire. Leave space enough to list all materials used as well as space to show the time consumed in completing the job. You can enter the total cost on your ledger each evening after the day's work is done and these job tickets afford an easy means of getting the information of your day's work into your ledger.

Keeping Track of Accessories

If in connection with your vulcanizing work you handle tires, tire accessories, etc., as most vulcanizers do, it is not only necessary to keep a complete record of shop cost but also to keep a complete and accurate set of books to show the following information:

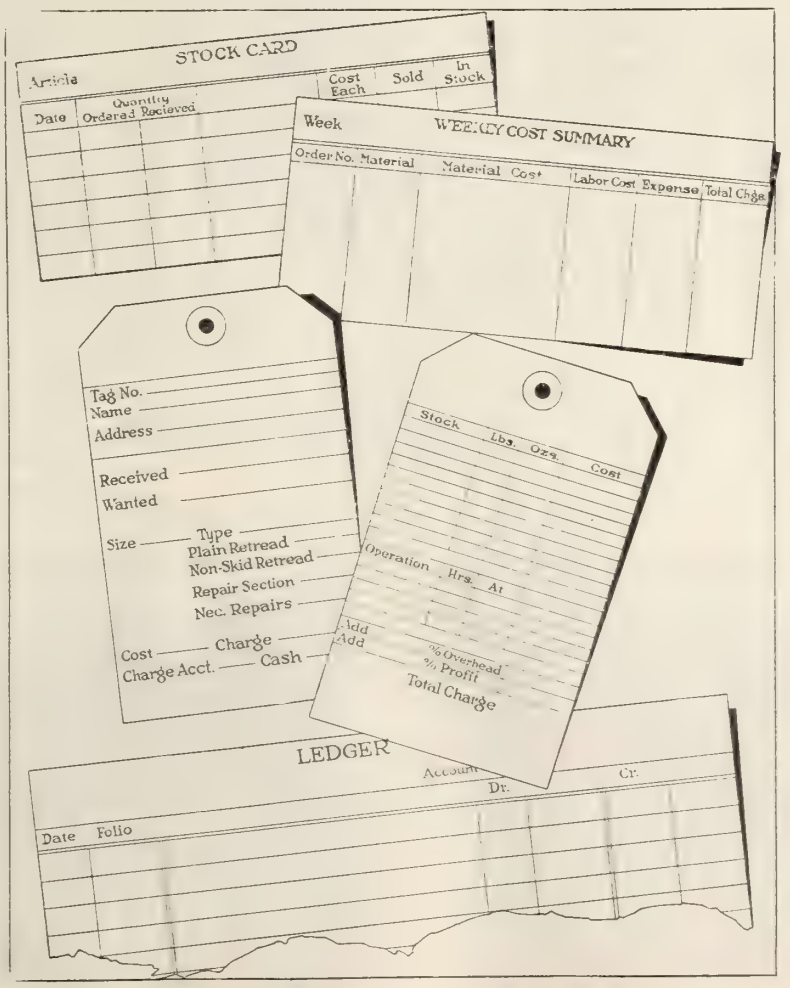
Total sales of each clerk;
Total sales of each department;
Total sales of labor;
Total of cash and charge sales;
Total of outstanding charge business;
Total of money owed—balance in bank;
Salaries paid workmen;
The approximate value of inventory;
Expenses;
Net profits;
Notes receivable and notes payable.

The usual reason offered by repairmen for not keeping an accurate account as outlined above is that the work costs too much. As a matter of fact, in most cases, it would cost less than the method that they are now using.

Any good system of bookkeeping does not necessarily imply additional expense. Usually it merely means a more direct, common sense and economical way of getting at the truth about your business, and is indeed much cheaper in the end.

In fact, all information called for above, except notes payable and notes receivable, can be compiled easily from three sources—sales slips, invoices for merchandise and expense items, checks and bank books. A regular set of double entry books are of course necessary if you are going into this line of work. The additional equipment needed consists of a few double forms for reports which are surprisingly easy to fill out, and with many retailers are a matter of policy and not of routine. No dealer should attempt to run his business without daily and monthly reports regardless of what his business is. They have a distinct money value and relieve him of worry enough to more than justify their preparation.

The profits of the information gained from a good accounting system will come from knowing the cost of doing business so that goods can be marked up properly, speeding up inefficient salesmen, and the sale of slow moving material, or departments, and from keeping credit within limits, etc. A complete story of results and how they are obtained is revealed by the figures.



Sample forms for keeping accurate records.

Vancouver Dealers Think It a Joke

THE accessory dealers in Vancouver are little perturbed and hugely amused at a new organization that is now making a drive for membership. The fee is ten dollars, and for this pittance the fortunate car owner will be enabled—so the prospectus reads—to purchase all his accessories, at **ten per cent. over cost.**

On the prospectus is given quite an imposing list of the most prominent shoe dealers, clothing dealers, lawyers, and other well-known business men and club men.

As a sample of the way the automotive dealers are treating the matter let me describe one of many telephone conversations.

Accessory man: "Hello, is this Mr. Dinglefugle; how are you? Say, Mr. Dinglefugle, have you heard about the new co-operative association that is being formed by the boot-wearers of Vancouver?"

Note.—(Mr. Dinglefugle is a prominent shoe man.)

Accessory man: "It appears that a bunch of people who make a practice of wearing shoes are forming an association which will provide them all with footgear at only 10 per cent. over cost. Great saving, etc., etc."

Mr. Dinglefugle: "What's that? What's that? I never heard of any such association. The thing is preposterous. Who is speaking?"

Accessory man: "Oh, I am mistaken, Mr. Dinglefugle, it's an accessory business. That's right, it's auto accessories that they aim to sell, not shoes. I just noticed your name among the other celebrities that have lent their names, and donated ten dollars to the enterprise. This is Bob McKanick, of the Popular Garage, and I wondered just what the new association was all about. Will you enlighten me? This co-operation business is great stuff, you know, I have five kids to be shod, and know all about old H.C.L.

"What's that? You didn't go into it very carefully before you signed the dotted line. That's funny. You are an awful temptation to a man with a scheme, aren't you? You didn't authorize the use of your name? I don't blame you. Well, good-bye, I know it costs you shoemen 35 per cent. to do business, and I rather question whether a three thousand dollar subsidy would let an accessory association operate within a ten per cent. overhead. Good-bye."

And so it goes. The clothing man is being "kidded" about a co-operative for those who wear 'em, and the whole score whose names appeared on the prospectus wish they had given the money toward Armenian relief.

How Albro Sells Tires and Good-Will

This Dealer Discovered That the Average Customer Likes a Little Attention and Advice —He Gave This in Big Doses and Was Gratified to See That It Built Up Big Business

By F. H. SWEET

ALBRO nodded and smiled to his customer, talked with him a few minutes, showed him the car and explained about the repairs, took his money, ran the car out of the garage, watched the customer off with a few parting words, then returned to the waiting tire salesman.

"Seem to be having a fine trade," commented the salesman. "That's the third customer I've waited away, and I see half a dozen or more cars calling for repairs. Pretty good accessory stock—all your men busy and apparently full of interest for their work. You're to be congratulated, Mr. Albro. Good stand, too. Only thing short that I can see is tires. You ought to have a larger stock for your trade."

"I know. Been a pretty heavy call for tires lately; frozen, rutty roads, you know, and ice. Thought I would order ten days ago, then remembered you'd be round soon, so waited."

"Thank you. I appreciate the confidence and good will. I shall be glad to fit you out."

"In a hurry?"

"No. My train doesn't leave for four hours, and I've got to put that time in. I might as well do it here. Have a little tire talk if you like—same as on my last visit."

"Just what I'd like," said Albro. "There are a number of things I want to ask you about. But just now, if you'll excuse me, I want to attend to that voice we hear outside talking to one of my men. He'll be inside here in a minute. Sent his car round by a boy yesterday afternoon and has come now to see about repairs. Saw him in the post office last evening, and sold him a tire then—or rather he ordered one, a kind he'd used before. Mr. Austin's a good customer, and I want to please him,"

"Of course," said the salesman, heartily. "Don't mind me. I've got nearly four hours, you know, and don't mind waiting. I'll be looking around the shop."

The voice outside had ceased, and a man came briskly into the shop. Albro went forward to meet him.

"Come to see you about my car," began the customer at once, "and to absorb any bits of advice you care to waste on me. Did you put on the new tire I bought?"

Service That Leads to Goodwill

"Why, no. I was waiting for you to come in. Now, Mr. Austin, it's this way: I'd put the tire I sold you on your right rear, and then the tire which you are carrying as a spare I should put in service at once, judging from its appearance I'd guess you've been carrying it some time. It's always best to keep a tire working, because then it doesn't have a chance to age and check, as it does when carried as a spare. You see, that would give you two good tires on your rear, and you can take the tire which you now have on your left rear and carry it as your spare. But before doing so you should let me put the tire through our repair department and fix up those two cuts that I see, for if you neglect them longer and are forced for some reason to put the tire back into service, say on a wet day, moisture and sand are bound to get in between the tread and carcass, and it will separate and go bad in a hurry."

"All right. Good plan," approved Mr. Austin. "And since I'm starting away on a trip tomorrow couldn't you look over my front tires and see whether or not they need any repairs? I think the suggestions you made in the post office last evening about anticipating trouble and removing its cause have a whole lot of merit."

"Thank you. Now, it won't take us long to form an opinion as to what should be done. Let's take a look at the fronts. Yes," a moment later, "good thing you spoke of it. Here's where I'm going to save you some money, Mr. Austin. Do you see that uneven wear on the left front tire here?"

Mr. Austin nodded. 'Of course, and I was wondering the other day why it should wear so much faster than the tire on the other side, as they were both applied the same day."

"Here's the trouble," explained Albro, as he grasped the wheel and moved it with both hands, showing possibly one to one and one-quarter inches play in the spindle. "You see, Mr. Austin, your adjustment there on your spindle has loosened up, and this has allowed quite a bit of play, with the result that you are getting two distinct motions of travel, both sideways—which by the way, gives your tires a wearing action in contact with the road as well as forward in its revolutions on the wheel. Now, see, we will just tighten this bearing up for you when you have the tire off, and in this way you can check the waste, which has, so far, from the appearance of the two tires, deprived you of about five or six hundred miles."

"Fine—fine," smiled Mr. Austin. "I had really begun to think it was the fault of the tires, as it didn't seem reasonable that one tire should wear faster than the other. I naturally came to the conclusion that one had a cheap grade of rubber in it and this was the cause of my trouble."

"Here's another thing," said Albro, who was studying the car with critical eyes. "You're running a blow-out patch in your other front tire. That needs a section at once, because from the looks of the tire on the outside you have hit some sharp obstruction and it has broken the fabric. We have blow-out patches to sell, of course, but with every blow-out patch we do sell we impress on the purchaser's mind that this is a temporary aid only, and that if they find it necessary to use a blow-out patch after being caught out on the road with a fabric break or cut they should immediately on returning home remove the tire and let us have it so that we may vulcanize a new section in it. You have what you might call a hinge at the point where the cut or break takes place, and the constant flexing which occurs in the tire's revolution will in time weaken the fabric next to the break, and the result is that the tire eventually becomes so weak at this point it can no longer withstand the pressure on the inside and blows the second time, and this usually puts a tire out of business."

Mr. Austin nodded, following Albro round.

Advice About Proper Inflation

"By the way," said Albro, straightening up, "we can increase your mileage if you will drop by here, say once a week, and let us test and inflate your tires. Just stand here at the side of the car and look at the two tires on this side. You notice they flatten out when they come in contact with the floor, even without a load, and naturally when you and your family are riding they will flatten out considerably more."

"I understand," replied Mr. Austin. "But I wouldn't suppose a little thing like that would make any difference. Isn't a tire strong enough to stand anything like that?"

"Not under certain conditions. When your tire is run under-inflated you have a flexing or working action between the various plies of your tire, and between the tread and the carcass or body of the tire itself. This will eventually wear out the union between the tread and the body of the tire, and between the plies themselves. And if this is continued long it is going to fray out the fabric on the inner ply, or it is going to separate the tread from the carcass. The result is that in the first instance it is going to chafe the tube, and in the second it will loosen the tread from the carcass. Of course, however, whenever these things happen, you are just losing that much mileage, which you paid for and should get."

"If these things are as important as you say," wondered Mr. Austin, "why have I never been told of them before? I didn't know there were so many things to take into consideration, and—" A dainty car swung in and stopped before the entrance. A woman's face turned in their direction, expectantly.

"My wife," explained Mr. Austin. "You must excuse me. Fix up the car right, and I will call for it tomorrow and pay your bill. And I appreciate the information you've given me, and will keep it in mind. I must go now. My wife wants me to look at a new house with her."

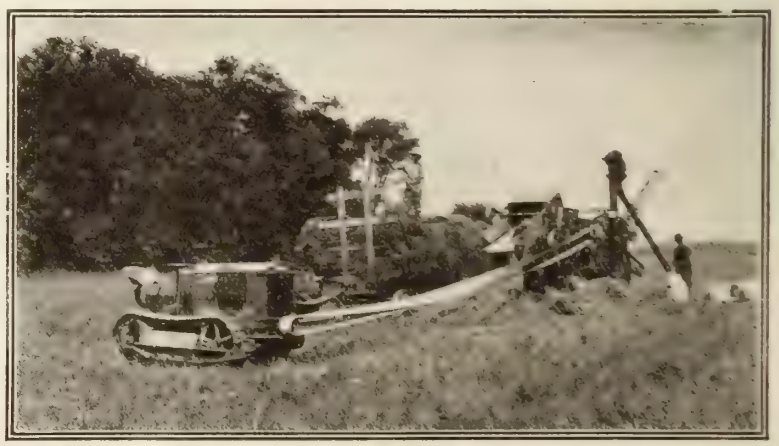
He hurried toward the little car. Albro gave some directions to his foreman, saw the car run into the repair department, then joined the tire salesman. The two lifted themselves to a bench.

Having the Customer's Point of View

"I like to hear you give your customers good advice," began the salesman approvingly. "That's the very core of success. Take your customer's point of view. Always have his interest at heart. Give him all the straight, sound advice you can, clearly, so he can understand it's the obvious thing to do. Never put your own interest above his own in conversation. It will swing back to your bank account with added force. The customer understands you have to make a profit. That is all right with him. Make the business a mutual benefit contact. Have him realize that you really like to do a good job through satisfaction in the job itself. See? Thought from what I've noticed you're already doing that."

"Trying to," admitted Albro. "I think it's what has built up my business."

"Of course. Regardless of the original cost, a tire to the average automobile owner is an expensive proposition. Let the customer understand you're trying to minimize expense for him, while making a



legitimate profit. Make him your friend. Present tire prices have probably not increased in proportion to the prices on other articles—nevertheless the outlay required for new casings and tubes is sufficient to make it an object for the owner to have them repaired again and again until the last possible mile has been secured. Have him understand that. A good profit is there. Everyone who has had experience in tire repair work admits that there are great chances for profit in it. Many repairmen are getting these profits by being forehanded and looking into the future, and in being square, like you; others are postponing their start or hesitating to enlarge for lack of faith in the business and in themselves. Certainly in these days when it is impossible for a repairman—but never mind listening to me, Mr. Albro," genially. "Yonder are two more men looking this way, and from their manner I can see business. Go to it."

Albro went, and before he finished with the two, three more were waiting for attention. It was nearly three hours before he got back to the tire salesman, who had made the rounds of the shops several times and helped some here and there, and was now looking at his watch speculatively.

"Less than an hour more, Albro," he said, as the dealer joined him. "We'd better be getting to those tires. From what I've seen in the past few hours your trade needs an unusually full assortment."

"My opinion exactly," agreed Albro. "I've sold six this morning and taken orders for several sizes I'm out of."

Forty minutes later Albro and the salesman stood at the entrance, shaking hands.

"Got to rush to catch that train," said the tire salesman. "But first I want to congratulate you on the fine trade you have, and on the fine stock of tires just selected, and—"

"Say, Albro," called a voice from a car that had just stopped opposite. "Got the rest of that set of tires? You remember I bought a front right last week. Fine tire, I'll tell the world. Can you put on the other three at once?"

"Right now, at once," laughed Albro. "Got 'em waiting for you."

He turned to the shop, glancing down the street. The salesman was hurrying toward the station, but he swung round to wave his hand.

Putting the Garage on an Efficiency Basis

Since He Systematized His Business, the Figure Information Which John Bumper Gets Every Day Produces in His Garage an Ever-Purring Twelve-Cylinder Efficiency Which He Now Recognizes as Important to Success

By FRED J. HUNTLEY

THE John Bumper garage had been doing a good business from the day it opened. In fact, its service was so popular that its reputation soon extended for many miles, and it was no uncommon thing for motorists, even in the larger cities and towns round about, to patronize the John Bumper garage whenever they possibly could get out to it.

Everybody who knew the place decided John Bumper was making money and bid fair to control the garage trade in that section of Manitoba. In fact, John thought so himself when he first started to attract the trade, but after he had been in business for about a year he began to have doubts about everything—the garage business in particular.

For some reason or other John was not making the money that he should—notwithstanding the fact that he probably was drawing more trade than any other garage of the same size in Manitoba. Why a man with a good business should fail to make a profit seemed beyond all reason at first, although he passed many weary and anxious hours in attempting to solve the problem. But the answer came one day when he least expected it—just the way it often comes when a problem seems about to overwhelm us.

Service was John Bumper's hobby, and no matter what the obstacles might be he never would do anything but give the very best at his command. So his assistant felt no hesitation in going to him one afternoon to say they were out of a certain make of tire, which was needed right away. If the usual John Bumper service was to be maintained it would be necessary to drive to the manufacturer's nearest supply station fifty miles away to get it.

"All right," John said. "Our garage is noted for service. I would rather lose money on this job than fall down on the service we always promise. But," he continued, "I thought we got in a good shipment of tires the other day. How is it we are out of stock now?"

"Yes, I know," the assistant replied. "We have tires, but we happen to be out of this particular make. We have more call for it than any other. I'm afraid we're hung up on that last tire shipment. That make doesn't seem to be very popular, although it is cheaper than any other we sell."

While his assistant was taking that fifty mile drive to get the tire that always is in demand, John Bumper made a survey of his stock. It almost gave him heart failure when he got well into the work. There was stock of every description—some that he had bought when he opened up a year before and should have been disposed of many months previously. But there it was, still occupying space that rightly should be filled with quick-moving merchandise, and it was retarding turnover and constantly slowing up profits. The buying had been so promiscuous that no one could tell exactly just what was on hand. But the jolt came when John Bumper started to delve under a quantity of discarded tires. There he found two sets of the very make that his assistant was driving fifty miles to get.

What John said would not look well in print. But it dawned on him all at once that the solution of his profit problem was actually in sight. No wonder he was falling behind when his earnings were going into stock that no one seemed to want, and when he did have the right kind it could not be found.

While he was about it he thought he would make a survey of certain accessories which he knew also were in much demand. Here he met with another surprise. He discovered that he had been selling equipment at prices that didn't cover the cost of goods plus the overhead expense. Then he found still further that owing to carelessness in figuring certain of the repair work had been done at a loss.

Decides to Instal a Bookkeeping System

John Bumper made a vow from that moment that there would be a change in the way his garage was managed. He still would insist on service to patrons, but he was determined to reorganize his business in such a way that he would get service for himself. The first thing he did was to departmentize his place and install a system of bookkeeping that gave him complete information about everything that was done. No transaction was so small that it did not find a place in his books.

ADVERTISING
BAIT
PROSPECT
PROSPECT
The merchant who neglects good advertising is like the fisherman who fails to keep his hook baited

The same can be said about the dealer who neglects system.

Records were kept of total sales at cost and selling price, subdivided to show whether they were cash or charge, and every item of repair work was listed showing cost of labor and material as well as the price of the job. The record of each sale was credited to the department to which it belonged—for instance, to accessories, tires, repairs, etc. His bookkeeping system from this time on provided up-to-the-minute records, showing accounts receivable and accounts payable and a comprehensive record of stock on hand. From this record it was an easy matter for John Bumper to figure gross profit by the simple process of addition and subtraction. The net profit for any period was determined merely by deducting the cost of doing business.

As these records began to tell John the story of his business from day to day, he wondered how it was that he had kept from financial disaster as long as he had. He was very thankful, however, that his eyes had been opened before it was too late. Needed adjustments were made as time went on and his figure facts told him what to do. He disposed of his unsaleable stock as best he could and in its place substituted only the equipment his records told him was in most demand.

It was no wonder, after what John Bumper had seen, that he became more impressed than ever when he recalled that bankruptcy records indicate that more concerns become insolvent or sell out at a loss because of a failure to preserve a proper margin between cost and selling price than any other reason. It is very evident from John's experience and the experience of many others that no garage man can be sure he is making a profit unless he knows in exact figures his overhead expenses, which must include bad accounts, depreciation, interest on invested capital and the proprietor's salary—items which many business men fail to include when figuring costs. But if any of these items are not included, together with other legitimate expenses, the garage man is only deluding himself into the belief that he is making more money than is really the case.

To-day the John Bumper garage is showing a big net return on the money invested with business growing more rapidly than ever. A daily analysis of all departments permits John to detect instantly any signs of "sickness" that might appear. This analysis is a condensed record of transactions in every department, showing which are the real money makers and which, if any, are not returning a profit.

The figure information which John Bumper gets every day has produced in his garage an ever-purring twelve cylinder efficiency, that he now recognizes as all important to successful management.

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Keep Name and Goods Before Public

IN discussing with retailers we often hear the saying, "Our goods are their own advertisement, they sell themselves."

In one sense that is very true. Goods of known worth soon become established in the minds of the public. The farmer soon learns that the "Eaterup" tractor is a very good tractor, and the motorist becomes convinced that the "Neverburst"' tire is a great tire. But, and here is where the individual dealer comes in, the farmer and the motorist don't know where to purchase Eaterup tractors and Neverburst tires unless somebody tells them.

And as there may be more than one dealer in the town handling these lines the one who shouts the loudest is likely to attract most attention.

The dealer should never make the mistake of presuming that all the farmers in his territory know him well and are familiar with his goods and service. As Mr. Williams, in his article, "Dealer's Signs, Samples and Service," on another page of this issue, points out, people are not so interested in us as we are liable to think, and when it comes to selling goods the dealer must keep his name conspicuously before his buying public if he would avoid oblivion.

If the dealer is convinced he is handling a good line and has a good service system he should pass his knowledge along to his prospects. He can depend on it, the buyer is not going to the trouble to find that out for himself under the present conditions. He is too busy about his own affairs.

It is the dealer's duty to keep his goods constantly before his public, and he should employ every means of doing so. Every form of publicity should be resorted to, and this should be backed up by intelligent salesmanship. Where it is possible to demonstrate, this important means of publicity should not be neglected. Well-timed and properly staged demonstrations have time and again turned the trick. If they don't actually sell goods at the time they tend to create a healthy interest, and they most assuredly bring the dealer and consumer together.

A well stocked and well kept showroom is a genuine and profitable means of publicity. The showroom need not be overburdened with stock. A few machines well placed and set up ready for use is all that is necessary. In the case of the implement dealer, whose space is usually limited, seasonable machines should be placed well to the fore. When the farmer buys a machine this year he wants it when he is going to use it. Hence the advisability of displaying seasonable machines.

Road signs, machine tags, and personal letters in conjunction with newspaper advertising and demonstrations should go a long way to relieve the dealers of their goods.

The Need for Salesmanship

"THE way to revive buying in the automobile and farm implement industries is to revive selling. And not only is it necessary to revive selling, but it is essential that selling be maintained."

For the past two or three years it was a comparatively easy task to sell goods to the farmer. There was lots of money in circulation and the farmer was elated at the high prices he was getting for his products. It was easy to sell then.

But what a change has taken place.

Money is now hard to get, and the prices of farm products have taken a tremendous drop; with the result the farmer is cautious and in many cases angry.

He is hard to sell. It is just as hard to persuade him to buy as it was easy before, in the fat war years. And because it is hard some dealers and salesmen say "it can't be done." What it is they probably mean can't be done is to coax the farmer to come to their doors and beg for goods as he used to.

Instead of sitting in his office and brooding over the situation, if the salesman would get out in the territory and exercise his selling powers he would find that there is some good business to be got. The country is not dead. It is just sick and in need of a stimulant.

The stimulant is salesmanship.

The dealers who are applying salesmanship are being rewarded by stimulated business. Salesmanship means more than merely selling. This year, above all years, the salesman must be thoroughly familiar with his line and be able to show his prospects how they will economize by buying. He could, with profit, adopt "economy" as his slogan.

Selling Spraying Machines

AS the result of educational effort on the part of farm papers, government agents and agricultural colleges, the use of up-to-date spraying machinery among fruit growers has become general. Dealers who are located in districts where fruit is grown extensively will find the handling of spraying outfits profitable.

In some sections dealers have built up their spraying line to almost a leader in their business. The dealer should study his machines and be able to educate his customers in their use. The manufacturers of spraying machinery and materials furnish all the necessary literature to enable the dealer to acquire the knowledge which is necessary to success in selling this line.

The dealer will also find it to his interest to learn all he can about the pests which the fruit grower has to contend with. There is always something cropping up which even the best posted grower needs information upon, and if the dealer is able to supply that information he will get the name among his prospects of being progressive and working in the interests of his customers. The dealer can get all the information on this subject he needs by applying to his provincial agricultural college or local government agent.

Under existing conditions in the implement field the dealer would do well to round out his line and cater to as large a percentage of his public as possible.

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Is There Business in the News for You?

HOW many dealers and salesmen in the automotive trade, selling cars, trucks, tractors, automotive equipment, tires or farm lighting plants are too busy to read the newspapers? asks Motor World in a recent editorial.

How many tips on prospective customers are these busy men missing—tips contained in items of local and vicinity news?

Does it mean anything to a passenger car dealer that a manufacturing or mercantile corporation in his territory has established a chain of branches? Could he sell cars for executives and employees of the company to use in travelling between these branches and the main factory or store? Does it mean anything that a number of persons have profited by the settlement of an estate? Does it mean anything that a man has climbed up a few rungs of the ladder of the business in which he is employed?

Does it mean anything to the truck dealer that a manufacturing or mercantile concern has bought a large tract of land? Is there likely to be a building or a number of buildings erected on the tract requiring transportation of building materials and perhaps of men engaged in the building operation? Does it mean anything that the school authorities of his county have decided to consolidate four or five or a dozen rural schools? Could he sell a truck or trucks with a bus body for the transportation of children from the old school districts near their homes to the new centrally located school?

Does it mean anything to the tractor dealer that Farmer Smith has bought the farm of Jones, his neighbor? Is Smith likely to be a prospect for a tractor and implements and possibly for farm power and lighting plant?

Does it mean anything to an accessory or tire dealer that a business house has decided to have its salesmen travel by automobiles instead of by train? Does it mean anything to the same tire and accessory dealer that a manufacturing or mercantile company has changed over from horse-drawn to motor-driven transportation equipment?

Are you too busy to read the news?

Can you afford not to read the news?

And if you are too busy to read it, can you afford not to have somebody in your organization read it systematically and carefully to discover and list possible prospects for the things you sell?

How a Tire Dealer Can Beat Mail Order Houses

By ROSS GRANT

The policy of price-cutting in the tire business is greatly to be deplored. It is a well-known fact that cut-price establishments rarely remain in business for a long period of time. Some dealers say that because of the opposition of the large mail order houses who usually sell at cut-rate prices, local dealers have either to cut prices or go out of business. That is by no means true. If the individual dealers would band themselves together and declare against giving a discount, and rigidly adhere to these declarations, with the service they are able to give on each tire sold there need be no fear that the mail order houses will seriously affect them.

A DEALER up country complained about the competition he was getting from a big mail order house in Toronto specializing in cut-price tires and accessories.

"They circularize my customers right here under my nose," he said, "quote prices lower than I can buy for, and get business that I ought to get. No use in my trying to sell tires."

He's right. There isn't a bit of use in his trying to sell tires—his way.

This much can be said to the credit of the mail order house—it offered a distinct advantage in the saving it could make to the car owner who mailed in his own order, waited for the tire to arrive, put it on the wheel himself, watched it carefully to avoid under-inflation, injury through tread-cuts and damage resulting from out-of-line wheels.

The main thing is, it offered what it had to give—a cut price.

And the local dealer? Well, he got discouraged and quit!

And yet he could have driven the mail order house out of the field if he had gone after the business, because he had something to sell that every car owner wanted badly. It was a commodity called Service.

But he didn't offer it.

This is a free country. The mails are open to all honest advertising. The mail order house had no monopoly of the plan of circularizing for business. The local dealer could have circularized every car owner in his locality at a cost of two cents each. The people actually wanted what he could easily have given them. But he let the big accessory house a hundred miles away beat him to it.

He didn't offer the commodity he actually had a stock of—service.

NEITHER the local dealer nor the mail order house adds a single bit of quality to an automobile tire. Consequently, if the consumer is to receive only what the tire manufacturer has perfected in his factory he can get the best value by buying the tire where he can procure it at the lowest price.

On this basis the mail order house, selling on a price platform, wins. And it wins because it bluntly and baldly offers a lower price than the local dealer —and nothing else—as its selling argument.

Yet it is not necessary that the mail and baldly offers a lower price than the local dealer The mail order house can offer nothing but the tire itself for a consumer's money. The local dealer can add a commodity of equal value—his service—that is, his knowledge and skill, his technical advice, his friendly concern in the customer's welfare.

By injecting this spirit into his business the dealer places himself out of reach of cut-price, profit-destroying competition. For, by rendering this service the dealer gives greater value for a larger sum of money, instead of low value for a small sum. In other words, by adding miles to tires the dealer can nullify the appeal of the cut-price tire—whether from the mail order house or a near-by competitor—because added mileage reduces the cost per mile, which was the first reason for the consumer's desire to purchase a low-priced tire.

The dealer reduces the element of inconvenience, frequent tire changing, road delays, exasperation, and annoyance. By so doing he builds up priceless goodwill, constant patronage, a local desire to spend local income locally, and a neighborly interest in his own success.

And he gets his full list price. He makes his full, earned profit. This profit and service depend upon each other. If he did not give the service he must cut his prices and his profits to meet the cut-price competition. On the other hand, the full profits enable him to give the service of a well-maintained establishment and still have a fair margin. So full profits and service go hand-in-hand and the two together result in permanency of business. Look over the list of big automobile and accessory dealers in Canada. How many of them reached their present stage of development through the medium of price cutting? It is a notorious fact that few cut-price establishments remain in business more than a short period of time. The dealer who gives a discount of five to ten per cent. actually wipes out his net profit and seriously jeopardizes his ability to pay his way permanently. Why should he deliberately take the toboggan slide to blue ruin when there is no necessity for it?

There is another aspect of the price-cutting problem. Every manufacturer of a first class tire is interested in maintaining a rigid price to the consumer. No matter how good the tire may be, if the consumer finds that he can buy it at a different price wherever he goes he will at once jump to the conclusion that there is something the matter—that dealers are losing confidence in its quality and are willing to sacrifice and to compete with each other in getting rid of it. The manufacturer rightly demands rigid price maintenance because he is protecting his good name. To accomplish this end and to protect the dealers who maintain prices he will go so far as to refuse to sell his product to cut-price dealers because it will pay him to do so in the long run. The dealer who is seriously contemplating a cut in the prices of his stock of standard tires or who gives a cut price occasionally with a warning to the customer to "keep it quiet" should ask himself whether it is worth his while to injure his position with the manufacturers who otherwise will stand behind him wholeheartedly.

THERE never was any logical reason for the cutting of prices in the tire business. Good business men are unanimously of the opinion that the practice is indefensible from every standpoint. The increase in sales that flows to the store of the price-cutter—if it does flow—by no means compensates for the decrease in profits, to say nothing of the loss of goodwill and bitter antagonism aroused among otherwise friendly competitors.

If you are an expert whist player—stick to whist. Don't try to beat the expert poker player—at poker. By the same token don't try to beat the mail order houses by cutting prices. That's their game. They know how to play it. They'll beat you at it every time.

Adopt tactics they don't know and can't use.

Three things you can do which they can't:

First—You can deliver tires to your customers when they want them. Second—You can add hundreds of thousands of miles to the tire service your customers get by inspecting their tires, by seeing that they are kept inflated and repaired, and by selling pressure gauges and "Tire Savers." Third—You can sell better tires—the mail order house almost invariably sells a cheap grade of tire.

The mail order and cut-price houses hammer their only argument steadily—"cut prices," "cut prices," "cut prices."

Why don't you use your arguments? Why don't you write letters to consumers showing the advantages in buying from you?

The mail order house has no corner on letter writing.

Hammer home these arguments—

We save you time and money.

We make your tires last longer.

We sell you better tires.

1
Positively NO PRICE CUTTING
No! Sir, I can't cut the price on tires
All right then I'll try some other place
2
Tell you what I'll do: I'll make you a special price if you'll keep it confidential

The price-cutter is the real enemy of the tire business

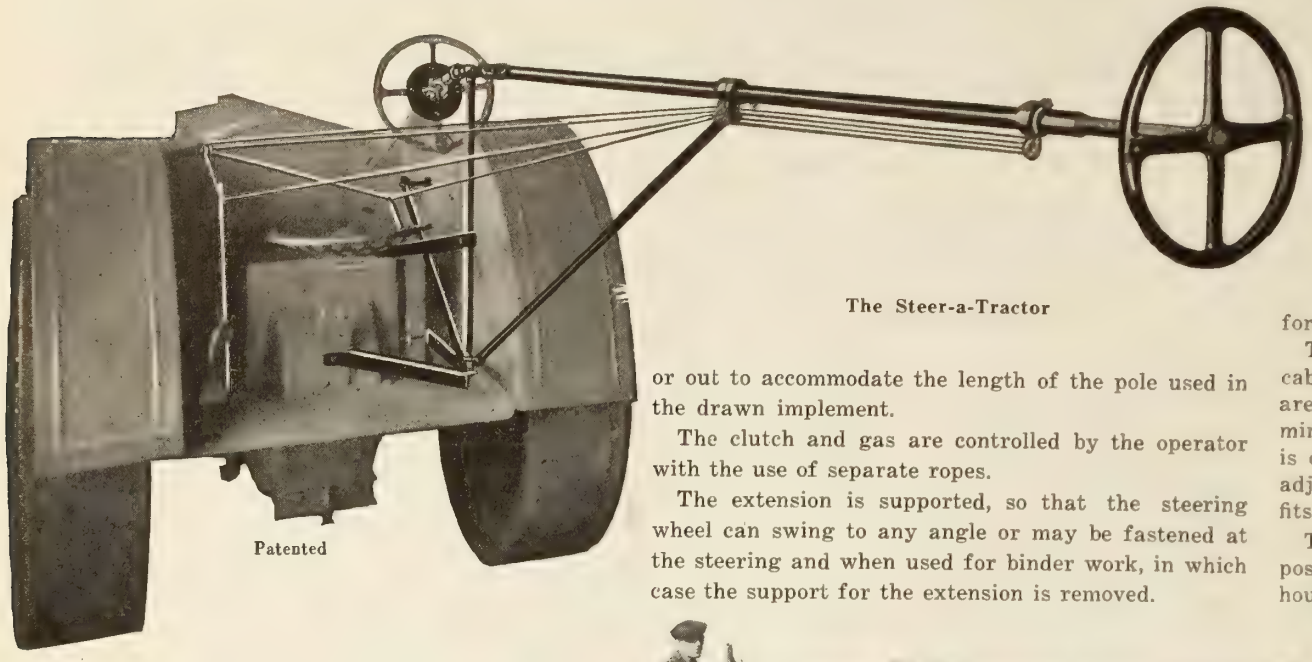
The Tractor is Now a One-Man Machine

Three New Devices Which Give the Operator Control Over Tractor and Implement

ONE of the pet objections formerly advanced by critics of the farm tractor was its alleged inability to save in man power. While they freely admitted it was a time-saver, and labor-saver, they would not admit that it reduced the number of men required, particularly for harvesting.

If they ever had a real argument it has now been taken away from them, because the one-man tractor, in all operations, is now an accomplished fact. Control devices are now being manufactured for practically all tractors, which enable the operator to sit on the implement he is using, and by means of control levers, guide both tractor and implement.

On this page we publish illustrations and brief descriptions of three such devices, which will be of considerable interest to the trade in these days of cutting farm production costs.



Patented

The Steer-a-Tractor

Tractor Extension Control

THE Wallis tractor extension control is a new device issued by the J. I. Case Plow Works Company, which makes possible a reduction in the number of men ordinarily required during harvest.

By means of this device one man from his seat on the implement the tractor is pulling has complete control of the two units. Steering is accomplished by means of an extension shaft at the tractor end of which there is a universal joint, which is attached directly to the tractor wheel. The other end of the shaft to which a steering wheel is attached is supported by braces bolted to the drawn implement. The shaft is telescoped, the smaller portion being square, runs loose in a swivel joint, thus taking care of the varying distances between the two units as when turning corners, etc.

The makers say the clutch control is simple, and is accomplished by means of a rope passing over a pulley, the latter being securely attached to the tractor by means of braces. The rope is attached to the clutch lever, and a pull forward or back on this rope engages or disengages the clutch. In this manner the operator controls both units, and thus accords a labor saving. A still further saving is accomplished if two implements, instead of one, are hitched to the tractor.

While the more common usage of this device will be with binders, the makers claim, it works just as profitably with mowers, with manure spreaders, wagons, etc.

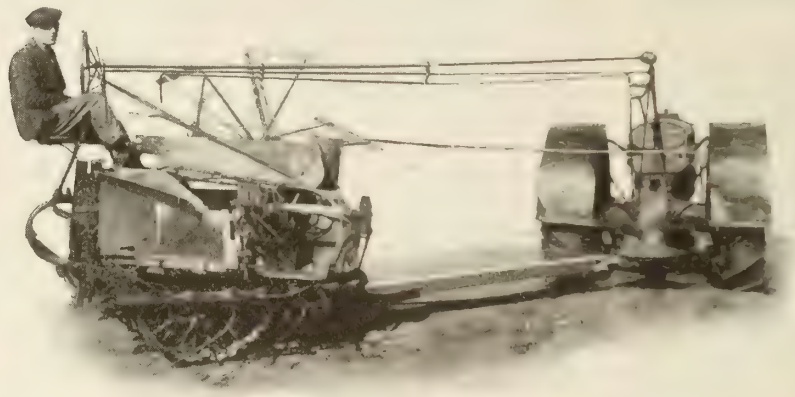
The Steer-a-Tractor

THIS device is being made by the Frederick Hansen Co., Washington Avenue, Minneapolis, who, in making their announcement, state that it is simple, durable, adjustable, and its price is within the reach of all.

Steel universal joints are used. The extension consists of a one-inch pipe into which is inserted a ⅞ in. hexagon steel shaft, which can be slipped in or out to accommodate the length of the pole used in the drawn implement.

The clutch and gas are controlled by the operator with the use of separate ropes.

The extension is supported, so that the steering wheel can swing to any angle or may be fastened at the steering and when used for binder work, in which case the support for the extension is removed.



Cherokee Guide and Hitch

Cherokee Guide and Hitch

THE Cherokee Guide Co. of Cherokee, Iowa, recently put on the market two new tractor devices. One is an extension control, for operating the tractor from the implement, and the other is a universal hitch.

The extension steering control is made of one-inch piping, squared to receive a ¾-in. square rod. It is adjustable to any length for different machines, up to twelve feet. It is also self-adjusting for length when turning corners or going over rough ground. The steering wheel, with all controls, is solidly supported by an extra heavy standard, adjusting itself to side movement of the tractor, but, it is claimed, always in a solid, permanent position to the operator.

The throttle control is constructed in a similar manner to that of the steering control, with ⅜ in. piping and 5-16 in. square rod connected direct to the throttle handle under the wheel. The governor speed can be set through the use of this control.

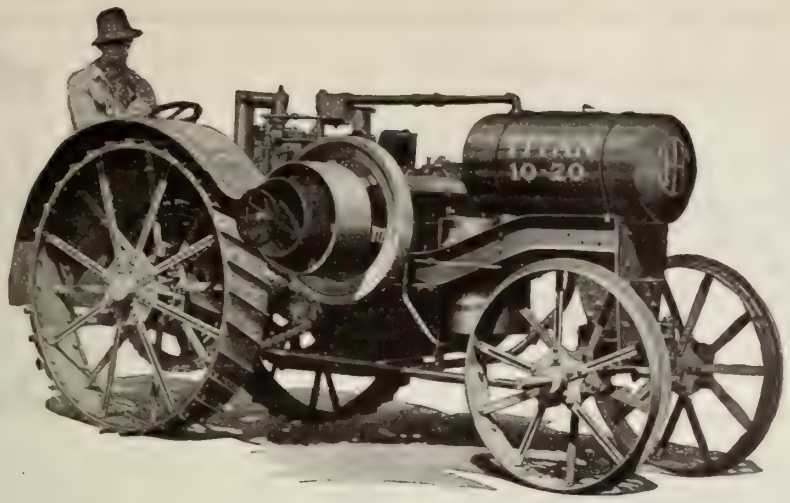
The gear control is also built of pipe with the same sliding feature incorporated. A twist on the gear shift extension handle automatically throws the shift lever, and pressure kept on the handle allows the operator, it is claimed, to shift the lever backward or forward as desired.

The clutch is handled by a simple positive lever and cable, which throws the clutch in or out. All controls are mounted on a quadrant which completes the terminals in one unit, on which the tractor steering wheel is connected to steering the control. This bracket is adjustable for height suitable to the operator, and fits any seat standard.

The tractor ends of all controls are held rigidly in position by a special bracket, supported to the gear housing and seat spring, terminating in solid universal joints. By this special support the makers say, the controls are always parallel to the implement tongue and straight ahead of the operator. It is also adjustable for height for different implements for clearance of levers, reels, shafts, etc., without changing the operator's ease of control.

The hitch is made of heavy boiler plate. With it no special tractor hitch is necessary for operating with a binder, as it gives clean corners and a square field. Short turns can be made without trouble of turning the tractor into the implement tongue or hitch. When operating with a harrow, disk, or other implement of this type, by letting the drawbar swing, the makers claim it allows the implement to regulate its own draft. By moving the pins in the hitch changes in the line of draft can be made to ten rigid positions. The hitch also forms a convenient platform for the operator when driving the tractor.

Tractor Extension Control



A Power Farming Message to the Canadian Trade

ON the broad, fertile farms of Canada the trend toward power farming will take another step forward this year. Dependable tractor power will be needed for threshing, fall plowing and a variety of other work. Now is the time to convince your prospects that the tractor makes farming more profitable. Get them started in time for the harvest work.

The reduction in the prices of **Titan 10-20, International 8-16 and International 15-30 tractors** makes them especially good values right now. You can talk rock-bottom prices, better farming through deeper plowing and more thorough tillage, getting work done on time in the short Canadian season, the saving of labor and the economy over horses even at lower feed prices.

Take these points up with your prospects. When you sell a **Titan 10-20, International 8-16 or International 15-30**, with their unexcelled records for dependable work, you are rendering a distinct service to your section—and it means profit to you.

Prices F. O. B. Following Points	Titan 10-20	International 8-16	International 15-30
Hamilton, Ont. ...	$1,260	$1,235	$2,420
London, Ont.	1,260	1,235	2,420
Ottawa, Ont.	1,260	1,235	2,420
Montreal, Que.....	1,280	1,245	2,455
Quebec, Que.	1,280	1,245	2,455
St. John, N.B.	1,300	1,260	2,485

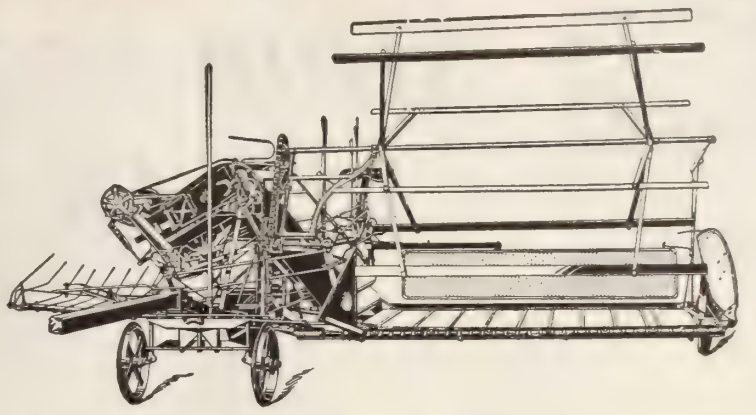
These prices are quoted on the basis of reasonable terms.

Our advertising to the farmer is interesting him in power farming. You are the personal representative to turn this interest into sales. Let's work together. See the blockman for further information and sales helps.

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD.
HAMILTON CANADA

Eastern Branches—Hamilton, London, Ottawa, Ont.; Montreal, Quebec, Que.; St. John, N.B.

McCormick and Deering



Binders That You Know Are Right

FOR nearly a century McCormick harvesting machines have held the lead in the grain-producing countries of the world. From a small beginning in 1831, the McCormick harvesting machine industry has grown, and now the sun never sets on McCormick machines. The outstanding reason for this world-wide publicity is satisfactory service.

In 1880 William Deering marketed the first twine binder. Up to that time wire had been used. Deering's twine binder revolutionized the industry. The knowledge and experience which he gained are built into the efficient Deering binders of to-day. You cannot afford to handle any but these time-tried binders that you know are right.

The New, Big Twine Ball

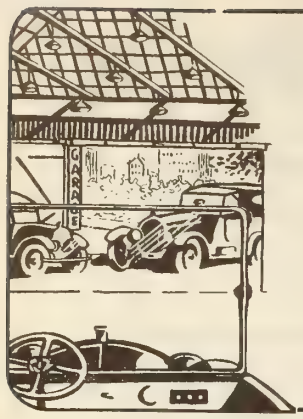
The high quality McCormick, Deering, and International brands of binder twine are being turned out in a new and heavier ball. Six balls to the bale instead of ten; the same amount of twine in a bale occupying a third less space. This saves you storage room and is a big, time-saving convenience to the farmer. Two of the big balls fit any standard twine can and tie almost twice as many bundles. Get your stock now. Write us or see the blockman.

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD
HAMILTON CANADA

Western Branches—Brandon, Winnipeg, Man.; Calgary, Edmonton, Lethbridge, Alta.; Estevan, N. Battleford, Regina, Saskatoon, Yorkton, Sask.
Eastern Branches—Hamilton, London, Ottawa, Ont.; Montreal, Quebec, Que.; St. John, N.B.

A bale of McCormick, Deering or International twine—six big balls instead of ten.

A bale of common twine — ten light balls mean time lost refilling the twine can.



SHOP NOTES FOR THE GARAGE MAN

WHY SOME TIRE REPAIRS FAIL

MOST tire repair failures are due largely to oversights and carelessness on the part of the repair man. They happen mainly because a detail of process has been overlooked. Vulcanizers, as a general rule, are quite sure of their materials and major methods. However, if they are kept busy with customers as well as doing the actual work in the shop and are called frequently from their work, the repair work is bound to suffer. Repairing requires careful supervision. The master repair man who is required to take care of customers should have an assistant well trained to do this supervising.

1. Cement, if not allowed to dry thoroughly, causes a porous condition between the new and the old material. This condition will show up black and glossy. The pores will be small.

2. Cement, if allowed to dry too long, loses its adhesive properties, thus permitting separation. This condition can properly be called "air cure" because the air attacks the cement, causing one form of cure.

3. If dust is allowed to settle on the repair before it is completed and it is not removed, it permits separation after the cure, because the plies of raw materials do not adhere to each other.

4. Oil or grease may be in either the old tread or the casing as well as in the solvent or gasoline. This is caused by the tire standing in pools of oil or by running on oiled roads, especially when the tread is badly cut. This allows the oil to soak through and penetrate to the fabric in the carcass.

5. Lack of pressure in a cure also causes a porous condition. In most cases it can be detected by poor flow of the raw material. It is caused by leaky sectional airbags, poor bead molds or bad clamps or from sectional airbags not fitting the inside of the casing properly.

6. Buckles inside the casing, and cracks on the outside of the casing along the tread line in sectional repairs are usually caused by too much pressure exerted on clamps in placing the casing in the cavity of the mold. The mold cavity is then smaller than the casing.

7. Clamps properly fitted should be just tight enough to form a complete mold wall around the casing.

8. Do not handle repair material any more than can possibly be helped.

9. In washing a repair with solvent the rag should be slightly moistened and not saturated.

10. Occasionally it is found that after curing a casing, the first layer of fabric bulges and upon opening it with an awl gas comes out. This condition is usually caused by a deteriorated condition of the carcass, wet cement or solvent.

CRACKS IN WATER JACKET

WITH the aid of a copper sulphate solution a crack in the water jacket or other cast iron part can be repaired easily. Clean the edges of the crack with a file or sandpaper. Paint the iron with the copper sulphate solution until a thin layer of copper is seen on it. On such a surface soft solder will take easily.

COLLECT ON DELIVERY

I WOULD like to see every repair shop in the land enforce a rule that the invoice should be ready for the customer the moment he calls for his car, and that he should pay for the work done before he leaves the establishment, said H. G. Fitch, director of service, Willys-Overland, Inc., in discussing repair shop efficiency in a paper read at the Service Managers' convention of the National Automobile Chambers of Commerce.

How often has it happened that a car has been delivered to a customer in bang-up shape. He has had the work charged, drives out, meets with an unfortunate accident, or runs into some trouble for which the dealer is in no wise to blame.

But the customer insists that the initial repairs were not properly made, or that in making repairs the dealer or his mechanic loosened or broke some other thingumbob on the car!

As a result he refuses to pay the first bill.

The dealer hems and haws, but the owner is firm and finally the dealer adjusts the bill in a manner unsatisfactory to all concerned, or else takes the matter to court. Either way he stands to lose, either his money or the customer.

One of our most successful distributors, who has built his business from a modest 100-car trade to a point where his annual contract runs well into the millions, attributes his success solely to his "strictly cash" policy in his service department.

Instances are related of intimate friends of his who call for their cars and want repair bills charged. This is diplomatically refused and the matter is referred to the distributor himself. He tells them the policy of the house, adds that he will gladly pay the bill himself and will consider the item a personal debt. Either the matter rests this way, or the customer, abashed, but nevertheless respecting the distributor's adherence to a sound business principle, pays the bill without further ado, and, in future, never fails to have money on hand to pay for work on his car. And this distributor's circle of friends is one of the staunchest and biggest in his home town.

POINTS FOR TWIST DRILL USERS

IF the drill chips on the edge it indicates that the lip clearance is too great and fails to support the cutting edge. This may be because the drill is too hard. It is advisable to ease off on the feed and watch the grinding.

If it splits in the web, it is either ground with improper centre lip angle or the feed is altogether too heavy. The centre lip should be at about 45 degrees to the cutting lips of the drill. The drill is in best condition when the chip comes in a close coil.

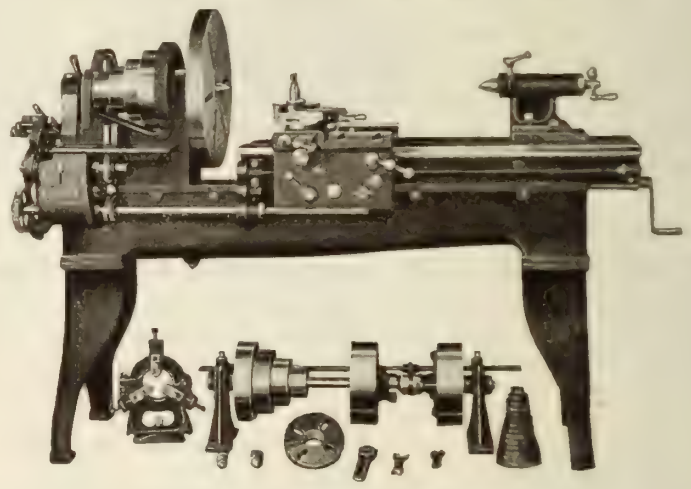
If the outer corners wear it shows that the speed is too high and it should be reduced. This is particularly noticeable in drilling cast iron.

Drilling cast iron can be done at a little faster speed than for steel, but the corners must be watched.—Belts.

SLIDING EXTENSION GAP LATHE

ONE of the most important tools in the modern automobile repair shop is the lathe. The sliding extension gap lathe which is now being put on the market by the Barnes Drill Co., is said to meet all the requirements of the modern garage.

The sliding extension gap feature of this lathe, the makers claim, is equivalent to two lathes in one, yet at a great saving in cost and requires a minimum of floor space. It swings 14 1-2 inches over the top bed and 24 inches diameter through the gap. On the 7½ foot machine the gap opens 36 inches wide thus also taking up to 8 feet between centers. Carriage travels up to end of bed, so that the top bed need only be drawn back enough to clear the work being swung on the large face plate through the gap or perhaps between centers with a large section swinging through the gap, much as a fly-wheel mounted on its crank shaft. In short, the opening or width of the gap may be varied to suit any particular job.



Sliding Extension Gap Lathe

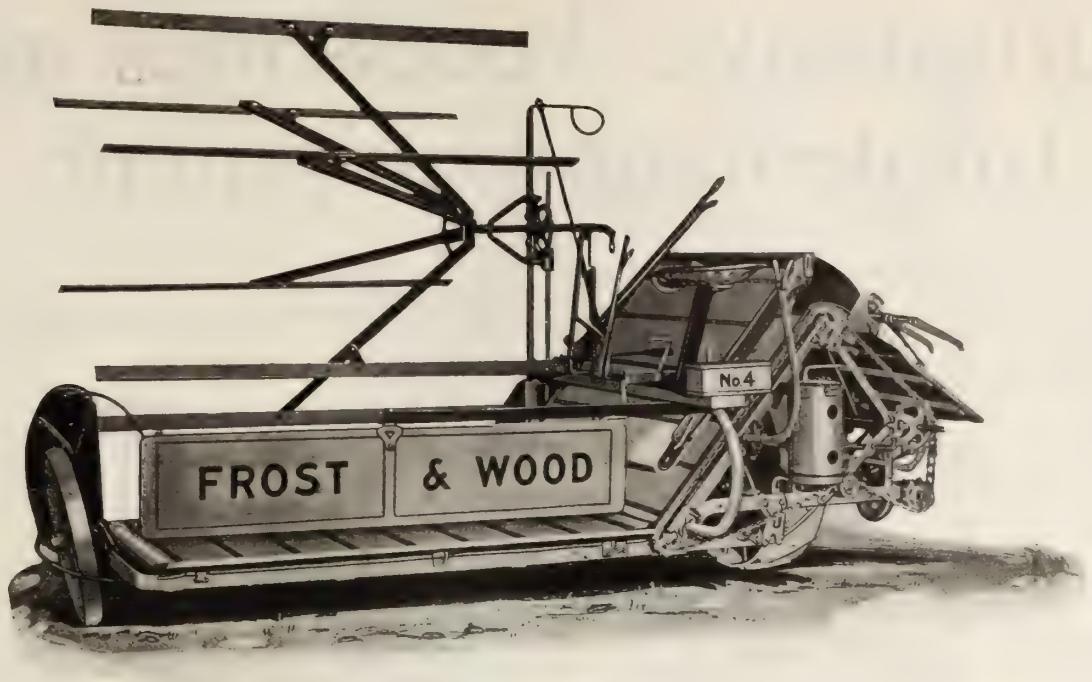
This extension type of gap lathe, it is claimed, takes care of practically every machining job that comes to the garage or service station. The exceptionally large hole through spindle (1 9-16 inches) takes in all axles, shafts, etc., up to 1 1-2 in. diameter. The top bed may be drawn back to take in the largest truck propeller shafts, crank shafts, and rods up to 8 feet. Taper attachment, milling attachment and cylinder reboring attachment equipment can be added. All tapers used in automobile construction, it is said, may be conveniently and accurately turned. All threads, right hand, left hand of any standard, also metric threads, can be properly cut. All kinds of key-seating and milling jobs may be done. Automobile and tractor blocks may be rebored accurately.

The cylinder reboring attachment consists of an angle bracket, to be clamped on the carriage, which carries a hardened bushing supplied for the boring-bar; 2 1-2 inch diameter boring-bar with Morse taper shank, high speed steel cutter, and draw-bolt through the spindle for positive drive. A taper bushing, which slides into the old hole to assist in centering the cylinder, and supporting bolts for steadying the outer end of the cylinder are also included. These bolts screw into an angle shoe which slides along in the gap on the ways of the main bed.

SAYS GASOLINE PROFITS NOT TOO HIGH

WHILE in the course of a statement recently, C. O. Stillman, of the Imperial Oil Company, pointed out that the spread in the price of gasoline on its way from the importer to the ultimate consumer is from 33 to 40 cents per gallon. He maintained that this is as small a margin as the company is able to operate upon. The first three cents of the spread goes to the company, while the last four cents represents the amount collected by the garagemen and the distribution agencies. Until the first of the year the profit to the distributors was three cents. This spread of three cents to the company and four cents to the distributors does not represent clear profit, according to Mr. Stillman, as gasoline evaporates and there are other losses in leakage during handling. The 4 cent spread, he stated, was the demand of distributors, and owing to loss in handling the company felt that garages were entitled to it.

MONTREAL.—O. H. Willison, of the Lyman Tube and Supply Company, Montreal, has just returned from a six weeks' trip to England, where he spent a month at the plant of the Hoffman Manufacturing Co., manufacturers of ball and roller bearings. The Lyman Tube and Supply Company will carry a large stock of Hoffmann equipment in their Canadian warehouses.



Frost & Wood Binders

Have many special features that appeal to every farmer

Every indication points to a normal harvest next month. With lower prices for their grain, your customers will be anxious to avoid every possibility of waste or loss of grain. The price of a new binder can easily be accounted for by delays due to trying to work with worn-out or inefficient machinery. A new or larger size binder is absolutely necessary on many farms to save this year's crop.

These Points Appeal Strongly to the Practical Man

Strength

Frame, wheels, etc., are made of high carbon steel, are securely braced to stand up to the roughest work.

Draft

An exceptionally well-balanced, light-draft machine. At every point where friction can occur we have put generous-sized roller bearings. See binder folder for diagram of them.

Elevation

Canvasses and rollers are so arranged that straw is sent forward to the packers in the best possible shape for tying. None wasted or lost—everything that is cut gets to the sheaf.

Knotter

Without exception the most successful binding attachment on the market. With reasonable usage requires no expert attention and ties accurately and securely.

Get your harvesting machinery repair orders in early in order to insure satisfactory service to your customers.

The Frost & Wood Co., Limited
Smiths Falls, Ontario
Montreal, Que. St. John, N. B.

Sold in Western Ontario and Western Canada by

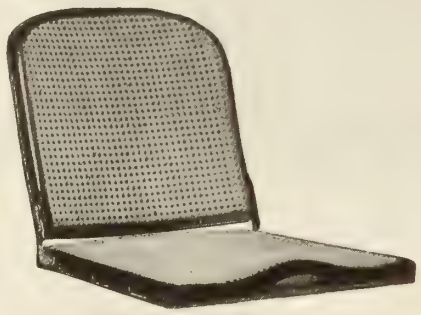
Cockshutt Plow Co., Limited
Brantford, Ontario
Winnipeg, Regina, Saskatoon, Calgary, Edmonton

Automotive Accessories *and* Implement Equipment

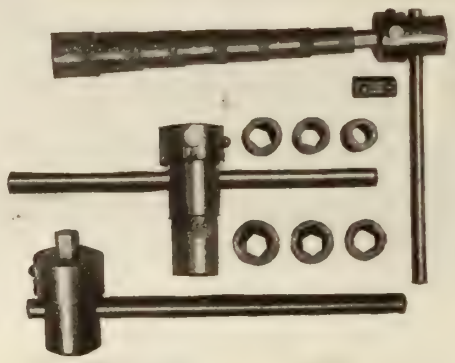
VENTO AUTO SEAT

THIS is an auxiliary seat which is set in, or on, any regular automobile seat, and is especially designed for use in hot weather. Cane is stretched over the back and seat frame and liberal air spacing is provided between the cane and the solid bottom. Vents around the back and seat frame provide for free circulation of air.

The makers claim that even in the hottest weather the Vento seat is always cool. It fits into any car, any model and any seat. It is made of solid wood bottom and back covered with leather or fabric. The seat and backrest are of cane and finished in birch, mahogany or walnut. It is made by the Brockman Co.



Vento Auto Seat



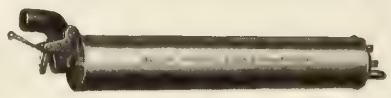
Bay State Wrenches

REPLACEMENT MUFFLER FOR BUICK CARS

THIS is a new product recently placed on the market by the Gray-Hawley Mfg. Co. It is intended for 1916, '17, '18, '19, '20 and '21 Buick cars. The makers say the replacement muffler slips into the same place and attaches to the same brackets as the regular Buick muffler.

Special attention has been given to eliminating back pressure, thereby, it is claimed, obtaining all the speed and power the motor is capable of developing. It is provided with a combined safety relief and muffler cutout valve, which, it is also claimed, saves the muffler from excessive strain in case of explosions from unburned gases, adding materially to its life. The cutout valve is a necessary feature when tuning the motor.

With each muffler is included a cable of suitable length and standard push-type locking pedals for operating the cutout.



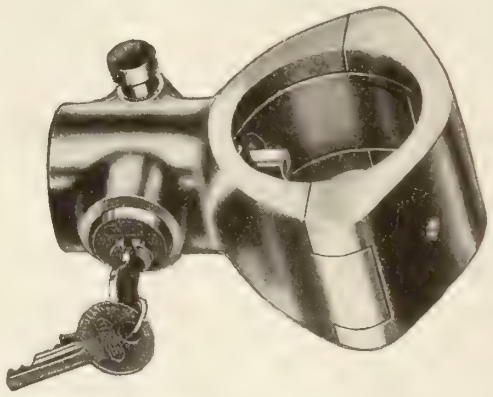
Replacement Muffler for Buick Cars

BAY STATE WRENCHES

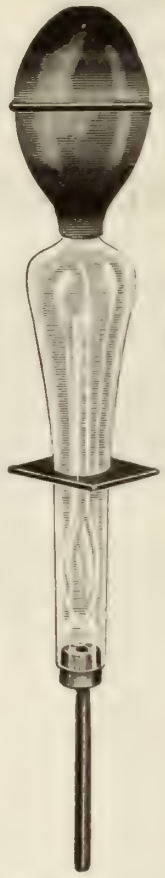
THE Bay State broached socket wrench sets are placed on the market by the Bay State Pump Co. to meet the demand, the makers state, for all-round serviceable wrenches that will not crack when subjected to severe strain. They are made in two sizes, known as No. 21 and No. 22, and are constructed of cold rolled steel, heat treated, to withstand severe abuse. The sockets fit all U. S. standard hexagon bolt and nut sizes, up to ½ in.; A. L. M. standard to 9-16 in.; and cap screw sizes to 9-16 in.

No. 21 set consists of a wrench which can be used either as a reversible ratchet or as a solid wrench, with either "L" or "T" handle, and with or without extension bar. The set complete consists of a combination reversible ratchet and solid wrench, an extension bar, a removable adapter for use when the wrench is applied direct to the socket, and seven sockets.

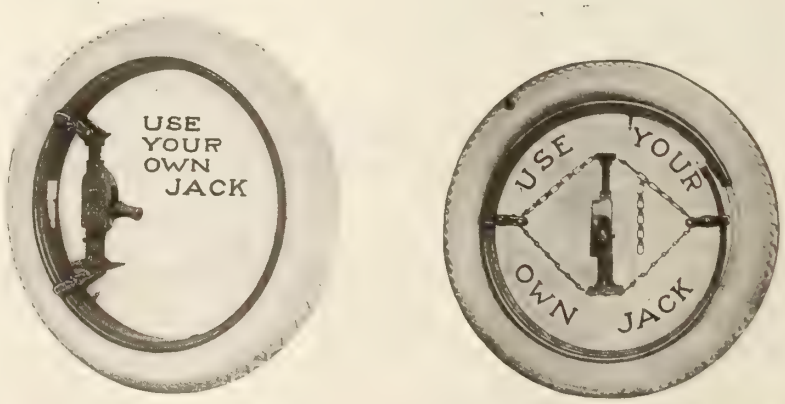
No. 22 is a small wrench consisting of one hexagon bar which can be used as "L" handle, "T" handle, or extension bar, five sockets, a master socket, and one hexagon adapter, which is removable from the socket so that the master socket may be used directly on a nut. The feature of the sockets being strung on the extension bar, it is claimed, affords a very convenient way of carrying them. They are easily and quickly removed.



Steer-Post Lock



"Ready-Easy" Chargometer



The Kompact Split-Rim Device

STEER-POST LOCK

THIS lock is designed for all makes of cars and consists of a bronze casting, highly nickled, with all working parts of case-hardened steel. It is permanently and rigidly attached to the steering post of the car. When the device is locked the steel plunger penetrates both outer and inner steering post, making it impossible, the makers state, to turn the steering wheel. By pressing a button it locks automatically and a key is used to unlock it. The steer-post lock is made in six sizes, each to fit the particular car for which it is intended. It is made by the H-R Mfg. Co.

THE KOMPACT SPLIT-RIM DEVICE

THIS device is designed to facilitate the handling of automobile rims of the split type, of every make and size. All such rims are cut or split in one place, various means being employed to lock them when expanded. While removing or replacing a tire, they must be contracted, i.e., one end must be drawn in and under the other, and held there.

The device consists of a length of steel chain and two special malleable iron clamps. The power to contract and expand the rim is furnished by the ordinary jack which is carried in every car.

The makers claim the device can also be used as a wheel puller. It is made by the Kompact Devices Co.

"READ-EASY" CHARGOMETER

THIS new instrument somewhat resembles the ordinary battery-tester in general principles of operation. However, the makers claim, it has several unique features which distinguish it and account for its effectiveness. The outstanding feature of the chargometer is that the float cannot stick or adhere to the sides of the tapered container. This feature is accomplished without the aid of attachments of any kind being used on the float, and thus, the makers say, providing the chargometer with a no-drag feature, insuring accurate readings.

The advantage claimed for this instrument is that the float is at all times fully exposed to the eye, clear of the bottom, and will not stick to the sides of the container.

Instructions governing the use of this instrument are as follows:

Remove the vent caps from the top of the battery cell. Force the air out of the chargometer by squeezing the bulb and then insert the tube in the cell. By releasing the pressure on the bulb a sample of the acid is drawn up. Draw up just enough to allow the hydrometer to float.

It is important that the hydrometer floats freely, touching neither top nor bottom. When the hydrometer floats freely at rest the line of the scale in the stem even with the surface of the acid is the specific gravity of the solution.

The chargometer need not be taken out of the cell while reading is made, and no danger of spilling acid is occasioned.

It is manufactured by the Ala Mfg. Co.

En-ar-co MOTOR OIL
NATIONAL LIGHT OIL
MANY ON THE WATER WAGON FEEL BETTER OFF
COPYRIGHT 1917
WHITE ROSE GASOLINE
En-ar-co GEAR GREASE
Toronto Globe April 22
Poor Old Water Waggon Paid Doubtful Tribute
In the referendum battle both wets and drys adopted the theory "Those not with us are against us." Nobody appeared able to play both sides of the argument. A motor supply station on north Yonge street appears to have solved the difficulty of sitting on both sides of the fence. Yesterday a sign appeared which read:
"Many on the water waggon feel better off."
Dry or wet, you can take it either way and get your own opinion in the reading.

TORONTO "GLOBE" COMMENTS ON BOY AND SLATE SIGN

The papers are quoting En-ar-co epigrams in box rules on their front pages. The people are talking. Everybody is watching those Big Boy and Slate Signs in front of Garages, Service Stations and Stores all over the country.

Have this Attention Directed Your Way

This sign and epigram service of ours is open to you. It's the most novel eye-catcher ever produced. And when it gets people looking your way—they start coming your way. Now, you want this sign. We want to tell you how easy you can get it; how we work out new epigrams for you to put on it every other day; how successful it has been for other Dealers. This information will only cost you the price of a postage stamp. And it won't obligate you one bit. So why not, right now, fill in this coupon (it's put here for your convenience) and slip it in the mail tonight addressed to our branch nearest you?

CANADIAN OIL COMPANIES LIMITED

BRANCHES:
Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg
Regina, Saskatoon, Edmonton, Calgary

CANADIAN OIL COMPANIES, LIMITED

Nearest Branch .....

Tell me without obligation how I can secure your "Boy and Slate Sign and Epigram Service."

Name .....

Address .....

.....

.....

I am in the .....business.

M.T.I. 6

STAYNEW AIR FILTER

THIS filter is designed for the elimination of dust, sand, grit and other abrasive qualities from the air taken in through the air inlet to the carburetors on automobiles, trucks, tractors, etc.

The efficiency of this filter, it is claimed, is due to the fact that the velocity of the air as it enters the filter shell is greatly reduced so that the larger particles of solid matter in the air are precipitated before entering the shell, also after the air enters the filter shell its velocity is further reduced to about one-tenth of the velocity with which it enters the shell. In the vertical pockets within the shell still further precipitation takes place so that only the very finest particles are carried to the filtering material and as the air passes through the filtering material at less than one foot per second it is thoroughly freed from all dust, sand, grit, and other solid and abrasive matter.

Fig. 1 is a perspective view of the filter ready to be connected with the air intake of a carburetor, or with the intake openings of air compressors, etc.

Fig. 2 is a horizontal section through the filter on the line 2x-2x of Fig. 1.

Fig. 3 is a vertical section on the line 3x-3x of Fig. 2.

Fig. 4 is a diagrammatic view showing the placing of the filter on an automobile with reference to the air intake of the carburetor.

No. 1 is a metal shell of rust proof material perforated as shown. No. 2 is the top cover easily removable. No. 3 is the bottom so perforated as to permit an easy outlet for the dust, grit, etc. No. 4 is a rust proof metal tube serving as outlet for the filtered air. No. 5 is a sleeve for centering the filter proper within the shell. No. 6 is a serpentine web of wire mesh bent to the outline shown in the cross section and is covered on the side and both ends with a specially prepared felt cloth. Nos. 7 and 8 are metal sleeves to which the wire mesh is fastened to hold it in shape. Nos. 9 and 10 are heavy felt washers to center the filter proper between the ends of the outer shell and also to provide a dust proof connection on the ends of the filter proper. No. 10-A is a dust proof flexible metal hose connecting the filter outlet with the air intake of a carburetor. No. 11 is the intake manifold of an engine. No. 12 represents the radiator. Made by Staynew Filter Co.

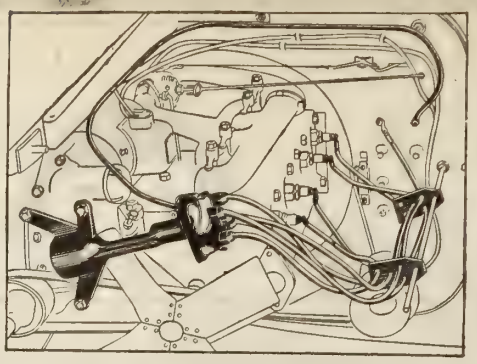
PETRY TIRE PUMP

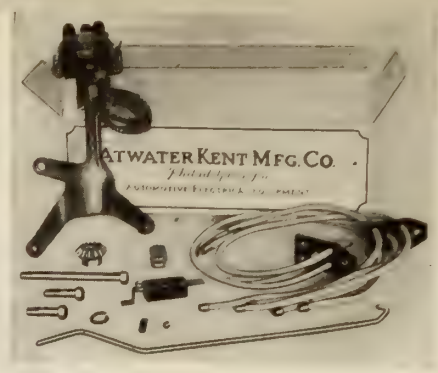
THE spreading foot base of the Petry tire pump, is said to be an improvement over the ordinary base now in vogue, and places pump sufficiently away from the motorist to allow a natural pumping position. A full long stroke is possible without touching the body.

The valve is guaranteed by the makers to be absolutely airtight. This valve, the makers say, must resist a factory test of an air pressure of 100 pounds under water—it has withstood a pressure of 150 pounds per inch.

The handle "feels right," it is claimed, when the motorist pumps, because many tests were made to develop a shape that would fit the hand. A handle lock is provided. With the lock snapped in place the handle tee and plunger are rigidly held—so that the pump may be readily removed from car. The piston is convex shaped to divert the lubricating oil to the sides of barrel for ease of lubrication and greater pressure on the leather cup washer.

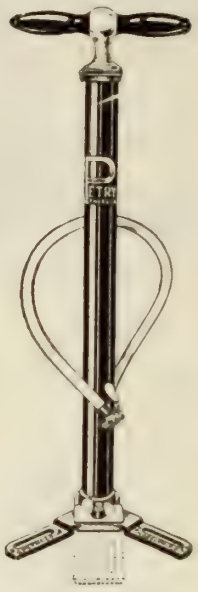
The Lox-on connection at the end of the hose with the tire valve deflating pin lessens pumping effort. The deflating pin keeps the tire valve open and saves the pumper the effort necessary to unseat the tire valve with each stroke. The hose is 27 inches long and 5 ply rubber tubing, securely fastened at each end by a specially designed clamp.



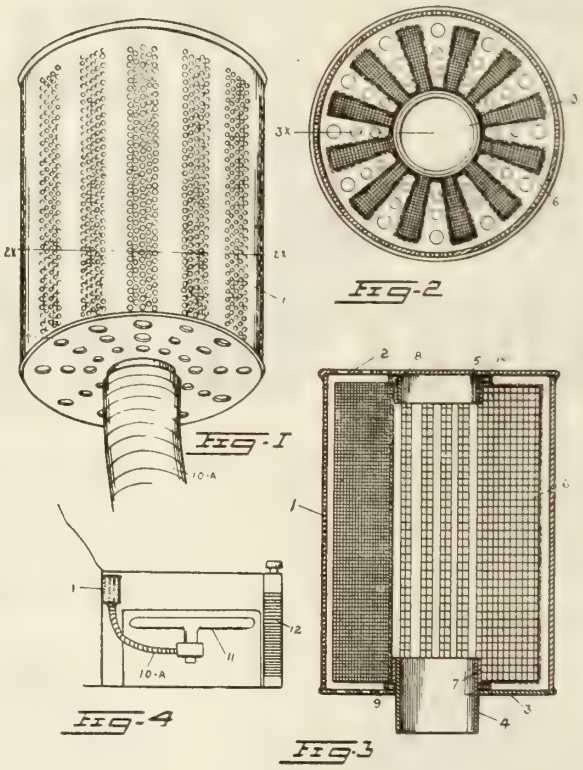


Atwater Kent Type C.C. Ignition System

No. 3 Hovey Jack



Petry Tire Pump



Stagnew Air Filter

Pin or Flat Key Type — Cadillac Type

Valve Keeper Inserter

VALVE KEEPER INSERTER

THIS tool is designed to both extract and insert the valve keepers of practically every automobile. The makers say it adjusts itself to the many various sizes and shapes of keepers through jaws that open and close by the simple action of pulling or pushing with the thumb on a knob on the tool handle. In addition to gripping the keeper by these jaws it is claimed the tool supports it the while on a frame under the jaws. This frame extends beyond the jaws and is formed in to center slightly so that the keeper cannot flip out the end.

After insertion on the valve stem of the horseshoe or "U" type keepers the tool cannot be withdrawn by pulling it from the keeper. The tool retains its grip on the keeper until the valve spring has been released and the cup supporting the spring is fully down and in place on the keeper. The drop of the cup on the keeper releases the tool and it is then withdrawn.

The pin and flat key type keepers when gripped are centered in the tool and since the slot in the end of the frame supporting the jaws fits the stem diameter, the pin is centered to the hole and placed exactly for easy, quick insertion. Made by the Service Equipment Company.

NO. 3 HOVEY JACK

IN designing this repair shop jack the makers say they have carried out the principle of durability, strength and speed. It can be used under a rear axle equipped with a truss rod, without any interference. It has an improved locking principle which, it is claimed, overcomes any danger of the handle coming up until lifted by the operator. The handle is so designed that it clears the floor at the extreme end sufficient to allow the operator plenty of hand room. There are no springs or delicate parts. The operation instructions are: to raise the car merely kick up the movable head to the desired height, roll the jack under the car and push down the handle; to lower the car, raise the handle.

The wheels are malleable, 6 inches in diameter with 1½-inch fall. The handle is made of round-edge bar stock and is 60 inches long. All working parts are of steel.

The jack can be adjusted to pick a load three inches from the floor, and high enough to reach the axle of any car. It is manufactured by J. H. Whetstone and Co.

ATWATER KENT TYPE CC IGNITION SYSTEM.

A DEVICE for improving Ford car operation has been made by the Atwater Kent Mfg. Company. For a long time the engineers of the Atwater Kent Mfg. Company have been working on the problem and the company has just placed on the market the type CC ignition system for Ford cars.

The contact maker and distributor, which is identical in design and quality with the ignition system used by manufacturers of high priced Atwater Kent equipped cars, is located on the front of the engine, in place of the regular Ford timer. It is mounted on a bracket where it is protected from oil and dirt, and easily accessible.

One of the regular Ford coils is used to step up the primary current. The vibrator is screwed down and an adapter unit connected in series with the coil. This arrangement provides three additional coils for emergency use, any one of which may be cut in by changing the connections.

It does away with the commutator and vibrators, the makers say. Cold weather starting is made easier, and in driving one can bring the car down to much slower speed than usual and the engine still pulls steadily in high gear. The perfectly synchronized spark also results in greater efficiency from the present low-grade fuel, thus increasing the mileage.

Delivering Every Ounce of Power

The amount of power generated but never put to work would be difficult to calculate. At every explosion this "truant" power slips past ill-fitting piston rings and is lost.

But not when there are ExcellencE Two-Piece Piston Rings to seal the firing chamber.

ExcellencE Rings fit always under any condition of piston and cylinder. And they expand both ways—examine one and see how slackness in any direction is provided for—the ExcellencE Rings keep tight up against the cylinder walls.

Consequently every ounce of power is delivered bang up against the cylinder head and is put to work.

ExcellencE Piston Rings will make a hit with your customers because of the added power they'll give every car in which they're used.

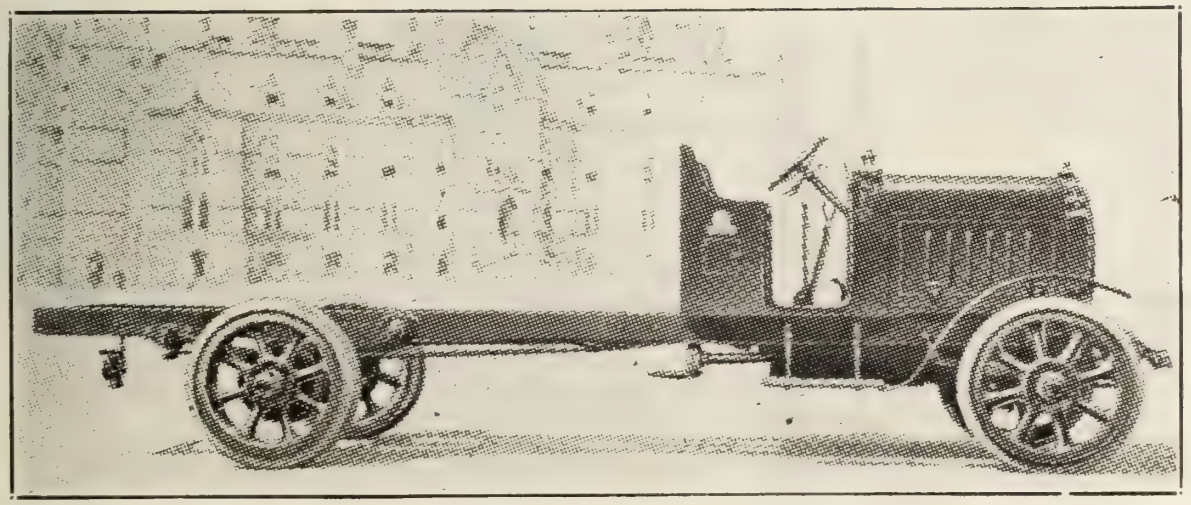
LAMONTAGNE LIMITED

Wholesale Dealers in Automotive Equipment

QUEBEC MONTREAL WINNIPEG

EXCELLENCE 2-PIECE PISTON RING

VETERAN TRUCKS



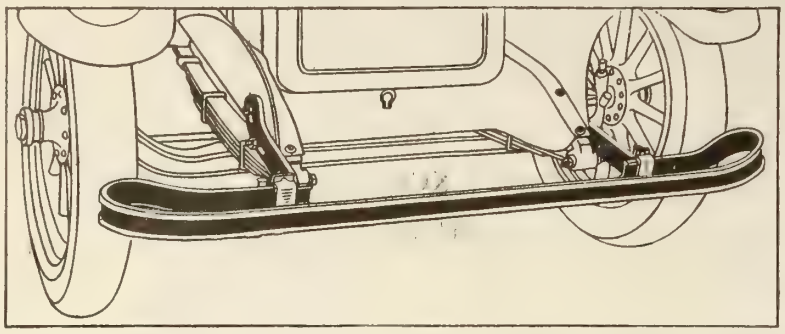
Made with a factor of safety to withstand the hardships a Truck must endure to be profitable to its owner. Simplicity of control, accessibility to all parts, adaptability to a multitude of users, these are VETERAN Truck features.

Built in Canada in Capacities from 1 Ton Up

EASTERN CANADA MOTOR TRUCK CO., LIMITED

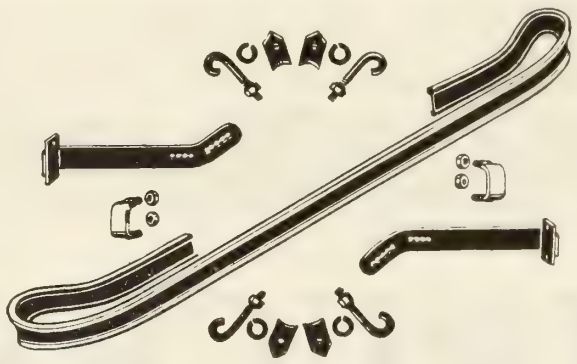
HULL, QUE.

"HERCULES"



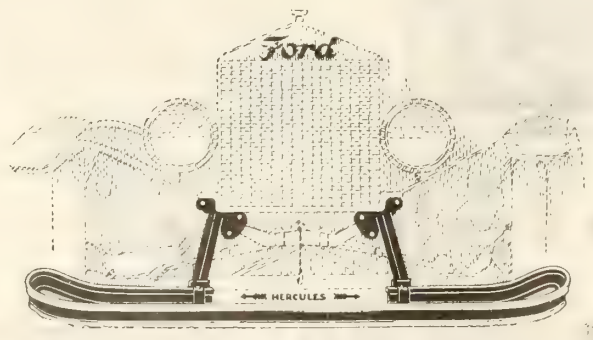
Fits every car and suits every motorist

The "Hercules" Bumper has all the good features you have ever seen in a bumper with all the bad features left out. It is the nearest thing to a "unanimous choice" that you can find.



"Hercules" combines strength and resiliency with beauty. It is light and yet strong, resilient and yet able to withstand shock, graceful in line and yet not weakened in any point. It is adjustable to fit any car.

The one style "Hercules" is better for business than a full line of other kinds. **Get the "Hercules" proposition from the manufacturers.**



HERCULES BUMPERS LIMITED

4 and 6 Spadina Avenue, Toronto

With the Manufacturers

The Master Valve Company, Ltd., Toronto, has been incorporated with capital of $100,000.

J. A. Patten has been elected a director of the Advance Rumely Thresher Co., LaPorte, Ind.

The Ford Motor Co., at the River Rouge plant, has reached a daily production of 200 Fordson tractors.

Chas. H. Morse, who developed the business of Fairbanks-Morse and Co., died at Orlando, Fla., on May 5.

The J. I. Case Threshing Machine Co. is erecting a new three-storey office building and warehouse at St. Louis, Mo.

The Remy Electric Co., Anderson, Ind., has begun the publication of an employees' paper called the "Remy Clan."

The Emerson-Brantingham Implement Co., Rockford, Ill., has established an export office at 50 Church St., New York.

The Black and Decker Mfg. Co., Towson Heights, Baltimore, announce the opening of a new branch at Pittsburgh.

The offices of the Chevrolet Motor Company are being removed from New York to the General Motors Building, Detroit.

The Dominion Motor Castings, Ltd., Hanna and McDougall Avenues, Windsor, is erecting a factory at a cost of $15,000.

The Imperial Oil, Ltd., Church St., Toronto, will erect a service station at Notre Dame and Marguerite streets, Montreal.

The Sumblink Machinery Co., Ltd., has been incorporated with a capital of $1,000,000, to manufacture washing machines, etc.

Howard E. Raymond, vice-president of the B. F. Goodrich Company, has announced his retirement from all active business.

The Climax Manufacturing Co., Winnipeg, recently put on the market a new storage battery, which is guaranteed for eighteen months.

The McQuay-Norris-Banfield Co., Ltd., Toronto, has been incorporated with a capitalization of $50,000 to manufacture piston rings.

W. A. Hood, manager of the Oliver Chilled Plow Works branch at Columbus, O., has been transferred to Indianapolis in a similar capacity.

The Samson Tractor Co. of Canada announce the appointment of C. E. M. Eastwood, Winnipeg, as their traveller covering Manitoba territory.

Langton J. Williams, manager of the General Ordnance Co., Cedar Rapids, Iowa, makers of the G-O tractor, visited the Canadian West recently.

The General Truck and Auto Sales, Ltd., Walkerville, Ont., has been incorporated with a capitalization of $200,000 to manufacture automobiles, trucks, and farm machinery.

The Borg and Beck Co., Chicago, has designed for tractor and truck use a new 14-inch single plate clutch to transmit a torque of 350 foot pounds and to be known as model FJX14.

The Banwell-Hoxie Wire Fence Co., Ltd., Hamilton, Ont., manufacturers of "Peerless" wire fencing and other wire products, recently issued a new catalogue covering their various styles of fencing.

Supervisional sales managers of the Hart-Parr Co., from all over Canada and the United States, met at the factory of the company, at Charles City, Ia., recently to plan a summer sales campaign.

Th Allis-Chalmers Mfg. Co., Milwaukee, Wis., announces the appointment of H. G. Chandler as manager of its branch house at Des Moines, Ia. Mr. Chandler was formerly connected with the Hart-Parr Co.

The Advance Rumeley Co., LaPorte, Ind., has organized and put in operation at its plant in Battle Creek, Mich., a truck division of the company, which will produce the truck model recently developed by the company.

E. A. Adams, advertising manager for the Canadian Fairbanks-Morse Co., has resigned to become Canadian representative of the Lovejoy Shock Absorber Co. Mr. MacGruder has been appointed to succeed Mr. Adams.

Bonuses totalling more than $1,000,000 have been destributed recently to the employes of the Dodge Bros. Motor Car Company, Detroit. The bonus amounts to from 10 to 15 per cent. of a year's salary and is in the form of Liberty bonds.

J. R. Ripley has been appointed advertising manager of the Tractor Bearings Division of the Hyatt Roller Bearing Company, Chicago, Ill., to succeed H. M. Carroll, who resigned recently to take an appointment with the Remy Electric Co.

C. B. Voorhis, vice-president and general sales manager of the Nash Motor Co., Kenosha, Wis., is on a trip through the Canadian West, calling on Nash dealers. Mr. Voorhis stated recently that his company had under consideration the establishment of a Canadian factory.

The British American Oil Co. are planning to make a number of improvements and alterations, which, it is said, will make Kerrobert, Saskatchewan, one of the largest and up-to-date distributing points in the province. A motor tank delivery service will be commenced. A. A. Willard, Saskatchewan manager of the company, recently visited Kerrobert with Mr. Lorimer, manager of the Kerrobert warehouse and plant, completing arrangements for the enlargement of the company's holdings at this point.

BLACK & DECKER OPEN NEW BRANCH

THE Black & Decker Manufacturing Co., of Towson Heights, Baltimore, Md., announce that they are now represented in Pittsburgh by D. C. Paul, formerly with Gaul, Derr & Shearer Co., of Philadelphia. The Pittsburgh branch, of which Mr. Paul is manager, includes western New York, western Pennsylvania and the northern part of West Virginia.

The Pittsburgh office is located at 303 Penn Ave., where there is also a completely equipped service station with a factory trained service man in charge. Mr. Paul has assisting him Frank Marrion and J. A. Miller.

Speed Comfort Sturdiness

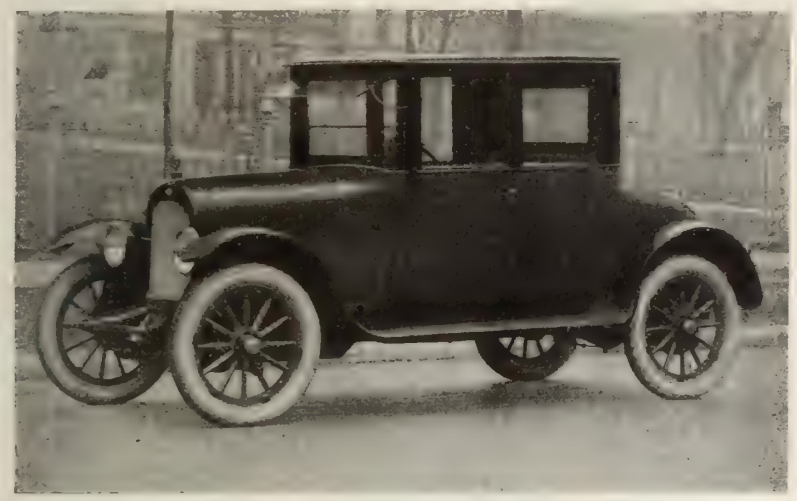
The Victory Car

The principal features that made it a Winner at Indianapolis Speedway, May 31st, 1920, that 500 miles of terrible grind—the tryout of the Victory Car—have been adapted for road and urban use in the Victory Car. It is the last word in completeness, the exterior showing perfect symmetry of line and finish and the interior features that refined distinctive taste that is so appreciated by motor owners.

Write us about this agency

There are people in your town looking for a distinctive and thoroughly reliable car at a moderate price, and by writing us you can secure the agency and the profitable results it is bound to create.

Touring and Roadster models are equipped with spare tire, front bumper, spotlight and combination mirror.

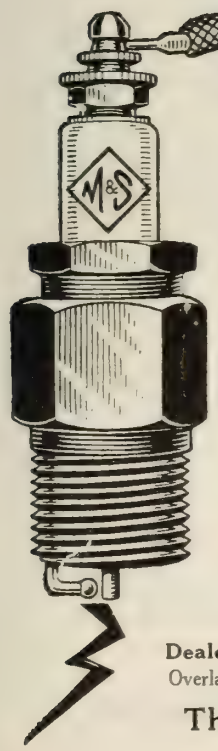


Coupe and Sedan models equipped as the open models, but upholstered in beautiful blue broadcloth.

Agencies thoughout the Dominion are now available. Your application will be given confidential consideration. Write or wire at once for your territory. Liberal discounts to live wires.

"Mention this paper in your letter."

Motor Mart of Montreal
LIMITED
1-3 Park Avenue - Montreal
DISTRIBUTORS FOR CANADA



"The Plug with the Hotter Spark"

The ball point of the "M & S" plug creates a larger and hotter spark, causing more complete combustion. This hot spark will give your car new life and more power.

The three-in-one terminal is adapted to any style ignition wiring. The high grade chemically glazed porcelains are interchangeable—one porcelain fits all plugs.

Dealers—The "M & S" plug is standard equipment on the Overland "4". Ask your jobber for them.

The Russell Gear & Machine Co.
Limited
1209 King Street West, Toronto
MADE IN CANADA
104

What we mean by

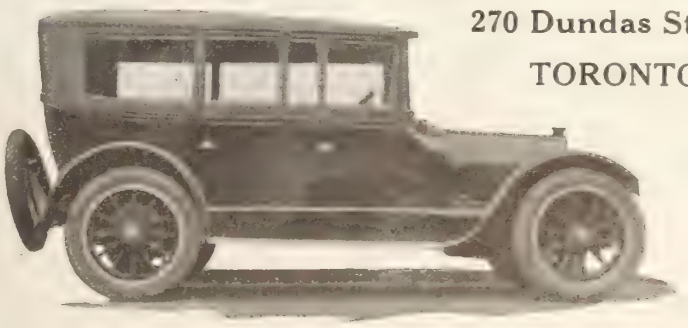
"Everything above the Chassis"

Our slogan: "Everything Above the Chassis," is a boast that we are constantly making good. As long as there is a frame to build on we can produce as fine a car body as you could find everywhere. It doesn't matter whether the body has been damaged in accident or whether it is merely desired to change the style, we'll give your customer just exactly what is wanted.

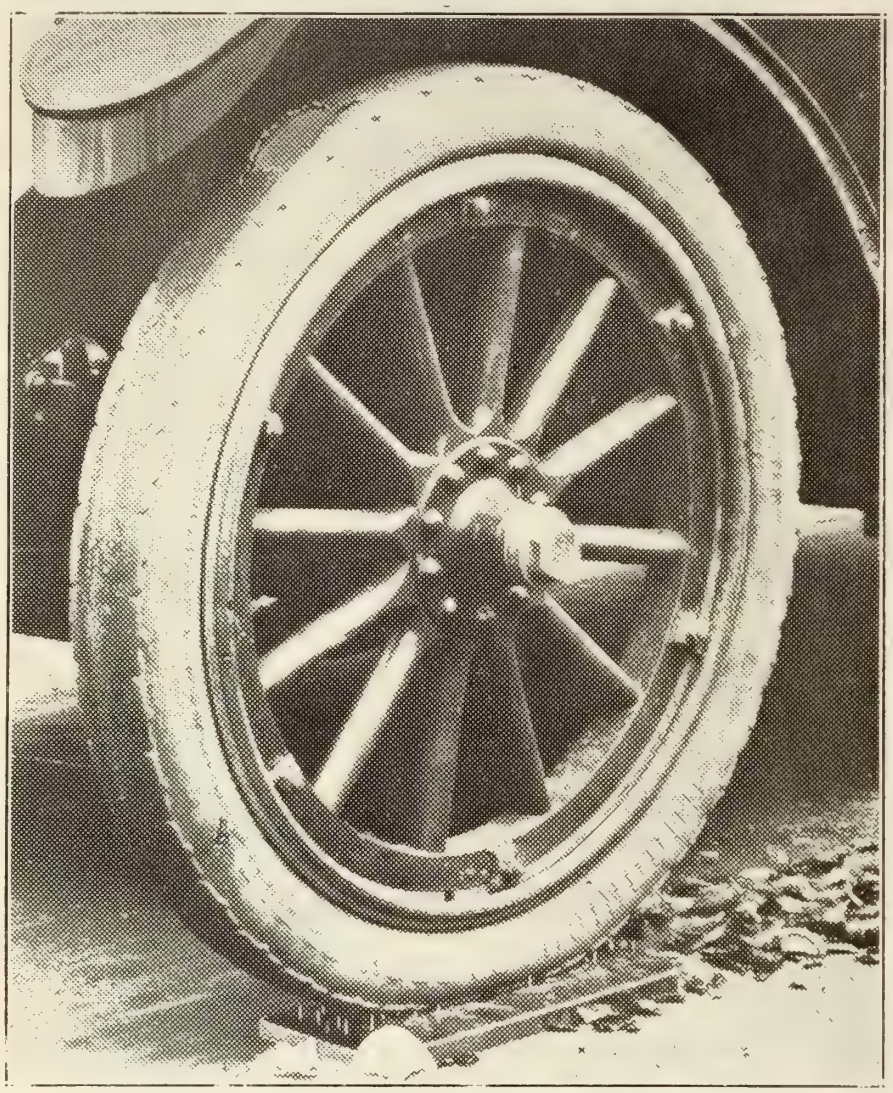
By linking up with us you really add to your staff a number of expert coach builders and to your equipment a specialty shop to produce bodies of all types.

We have an interesting service proposition which is being made to only one man in each locality. Will you write for it?

AUTO TOP and EQUIPMENT CO., Limited
270 Dundas St. W.
TORONTO



"MAC-TAG"
Puncture-Proof Inner Tube



Undeniable Proof that the long hoped for puncture-proof tire is an accomplished fact

This illustration, from actual photograph, shows Mac-Tag Inner Tube in worn casing being driven over broken glass and tenpenny nails driven up through an inch board. Although the car was loaded with fourteen men the glass and nails failed to puncture the Mac-Tag Tube. This is proof that cannot be refuted that Mac-Tag is genuinely Puncture-proof.

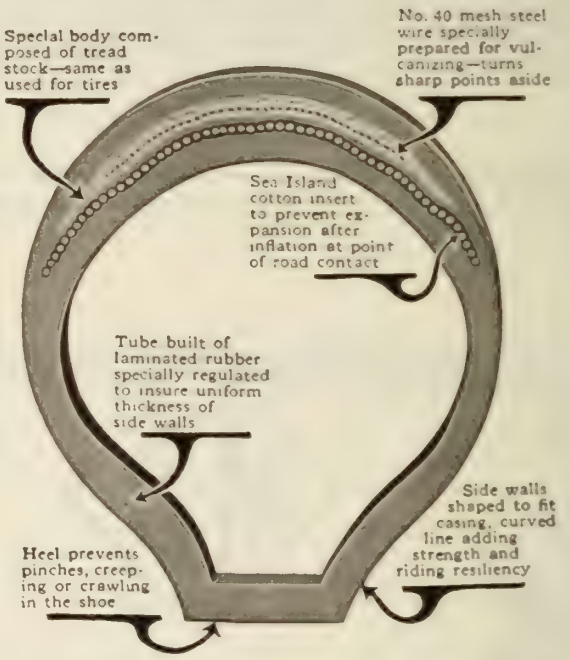
Mac-Tag is a shaped tube of laminated rubber specially regulated to insure uniform thickness of walls. It fits the casing. An insert of Sea Island cotton prevents expansion at the point of road contact. In addition this section is reinforced by a special body composed of standard tread stock (same as used for casings) in which is embedded No. 40-mesh Steel Wire, specially prepared for vulcanizing; this turns aside sharp points. Joint is reinforced and a special valve base prevents leakage at this point.

The most desired advance in automobile comfort, convenience and economy

Every motorist who ever had a puncture or a blow-out has ardently hoped for the opportunity to buy a set of tires that would be proof against such accidents.

You can give your customers that opportunity through "Mac-Tag" — the tube with the Puncture-proof Insert.

MAC-TAG
should create a sales record


Special body composed of tread stock—same as used for tires
No. 40 mesh steel wire specially prepared for vulcanizing—turns sharp points aside
Sea Island cotton insert to prevent expansion after inflation at point of road contact
Tube built of laminated rubber specially regulated to insure uniform thickness of side walls
Side walls shaped to fit casing, curved line adding strength and riding resiliency
Heel prevents pinches, creeping or crawling in the shoe

Everybody wants it—every motorist will be tickled to death to be free of all tire troubles. Once the facts are thoroughly known to a few of your best customers "Mac-Tag" will begin to sell like the proverbial hot cakes. Show your customers "Mac-Tag" construction and right away they'll understand how "Mac-Tag" can travel over glass, upturned nails, and other sharp objects without puncturing.

We will help you with plenty of good, strong, convincingly-written literature. With your assistance will put "Mac-Tag" over in your locality. Write for particulars of very attractive proposition.

The Liberty Tire & Rubber Company
OF CANADA, LIMITED

311-311A Transportation Building
120 ST. JAMES STREET, MONTREAL

Jos. O. Gourre & Co., *Distributors*

National Implement Vehicle Tractor Demonstration

CHICAGO, May 20th.—The most radical step ever decided by manufacturers to establish the economic place of the tractor beyond dispute was taken by the National Show and Demonstration Committee, Tractor and Thresher Department of the National Implement Vehicle Association today, which made provision for contest between horses and tractors in field operations.

This committee decided to hold three demonstrations of which the first is scheduled for Fargo, N.D., June 28, 29 and 30. Another demonstration will be held in the Southwest and the third in the Central West, time and location of each to be decided later.

Two shows were also authorized; one for Minneapolis, the other for Kansas City, provided suitable quarters can be furnished, rent free; and provided also that all other suitable and satisfactory arrangements can be made between the local and national committees.

The innovation of the horse and tractor contest is of special interest, and in order that the results of these comparative tests between horses and tractors may be unbiased, fair and convincing, it was resolved by the committee that, "The observations and data for such records be taken by a committee composed of representatives from the American Society of Agricultural Engineers, from the State University, either of the state where the demonstration is held or the university of any other state; from tractor manufacturers, from the Society of Automotive Engineers, from the Horse Association of America and from the U. S. Department of Agriculture."

As an inducement to secure the very best horse power available, it was decided to award suitable prizes to horse owners entering the contest and making the best records on the cost of preparing their land allotments.

The dollars and cents cost comparison between horse power and tractor power in plowing and preparing seed bed as provided in these demonstrations will not take into account some of the most vital considerations in successful tractor operation, especially belt work, but new rules are provided by the committee so that manufacturers of belts and belt driven machinery of any kind, operated with a tractor are eligible to exhibit at these demonstrations. It is expected that the educational work of belt operations will be among the most interesting features of the demonstrations.

No individual records of tractor performance and no comparisons between individual tractors will be given out for publication by the committee in charge of the demonstration. Each tractor manufacturer, however, will be provided with the record of his own machines. The only results made public will be averages.

In this connection rules will be made to cover such details as depth of plowing, speed, etc. Observers will watch the operations and note the performance of each tractor and averages will be secured from those qualifying under the rules. Also averages will be secured for those violating the rules and thereby failing to qualify though completing the work assigned to them. Finally the average of the best six tractor records will be taken from those qualifying. Those tractors which do not fulfill the conditions will constitute one class for which averages will be made. Those fulfilling the conditions will constitute another class and their averages will be published.

Of these the six highest will constitute a third class, the average of which will also be published. No individual records will be published, although the records of each machine will be given by the committee to each manufacturer entering his tractors in the demonstration.

A plan similar to the one adopted for tractor records will be used for horse records. Those teams which fail to qualify under the rules will be grouped together and their average secured. Those qualifying under the rules will also be average and the best of these will constitute another group eligible for prizes.

This will bring out the very best horse performance and the best tractor performance, and represent the respective merits of each form of power.

The rules governing these demonstrations will be worked out by a thoroughly representative committee familiar with all the interests involved, and it is hoped that the results will provide accurate scientific data to establish the relative place of the tractor and horse in field operations.

It should be made very clear, however, that it is not the intention of these demonstrations to convey the idea that the tractor is limited to field operations or that the horse is to be eliminated from the farm, or that it is only a dollars and cents comparison between the horse and the tractor in plowing and preparing seed bed and seeding.

A manager was definitely decided upon by the committee and authority was given Finley P. Mount to negotiate for his services in managing both the demonstrations and the shows for this year.

MAXWELL MOTOR PLANT PURCHASED.

THE Maxwell Motor Company plant was purchased recently by Walter P. Chrysler and Harry Bronnon for $10,915,100 through a foreclosure sale ordered by Judge Tuttle of the Federal Court.

The sale was preliminary to a reorganization and merger with the Chalmers Company, and was the result of a friendly suit brought by creditors to aid this merger.

The original Maxwell Company was capitalized at $40,000,000, in Delaware. The new company is capitalized at an additional $15,000,000 from stock subscriptions by present stockholders or loans furnished by banking interests. The new organization is to be effected under charter granted by West Virginia.

MANITOBA AUTO LICENSES REACH RECORD MARK

AUTOMOBILE licenses to the number of about 25,000 have been issued to date for 1921 in Manitoba, according to W. McKnight in charge of the automobile taxation office. The issue of licenses to date is far ahead of last year, but exact figures are not yet available.

Licenses for Winnipeg are pretty well all issued and in the country assistance given by the provincial police is producing good results. Many applications now in hand are being held up for the difference between the old tax and the increased tax. No difficulty is being experienced in collecting the increased tax.

BURD Quick Seating PISTON RINGS

The outer edges—the Quick Seating feature—lap in quickly, producing a seat in perfect harmony with the hard glass-like surface of the cylinder, resulting in maximum efficiency for this type of ring in the minimum time. Seating is accomplished in about one-fifth of the time required for plain surface rings.

One Piece—Easy to Install

The slow, laborious "lapping in" and the annoying delay before the owner can use his car is eliminated. Burd Quick Seating Piston Rings have won the instant approval of mechanics and motorists. Millions of them are in successful operation. The simple Step-Joint gives the minimum opening and prevents leakage.

Sizes up to and including 4 inches, 75c
Sizes over 4 inches—up to and including 5 inches, 90c

Burd Ring Sales Co. of Canada
322 McIntyre Bldg. - Winnipeg, Man.

BURD HIGH COMPRESSION RING CO. Rockford, Ill.

For Sale

Lathes, Drills, Milling Machines, all kinds of Used and New Equipment

If you are thinking of buying equipment for your garage or machine shop, it will pay you to write for a copy of

CANADIAN MACHINERY
AND MANUFACTURING NEWS

In addition to a Buyers' Directory of leading manufacturers and dealers in New Machinery you will find lists of Used Equipment of almost every conceivable kind. And if you cannot find listed what you require, drop us a line and we will locate it for you. This service is free to readers of CANADIAN MOTOR, TRACTOR AND IMPLEMENT TRADE JOURNAL. Just fill out the form below.

CANADIAN MACHINERY AND MANUFACTURING NEWS
153 University Ave., Toronto, Ontario

Please send me a copy of CANADIAN MACHINERY AND MANUFACTURING NEWS. I (or we) want to purchase the following equipment .....

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Name.....
Street Address.....
City.....

(Canadian Machinery and Manufacturing News and Canadian Motor, Tractor and Implement Trade Journal are published by The MacLean Publishing Co., Limited, Toronto, Canada.)

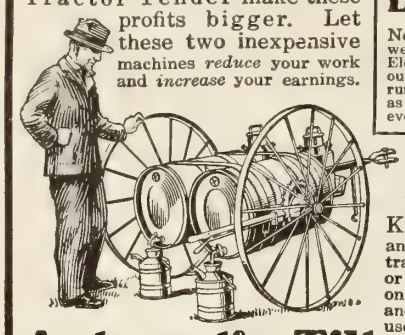
Bigger Farm Profits

Here are two labor savers every farmer needs, not only because of their convenience but because they *save* money and *make* money. Power farming pays the big profits. The Liberty Grain Blower and the Link Tractor Tender make these profits bigger. Let these two inexpensive machines *reduce* your work and *increase* your earnings.

Move, clean and grade your grain *in one operation*—fill largest bins and cars without inside scooping — save time, labor, sacks and money and get TOP PRICES for your crop by handling it with the

Liberty Grain Blower

No buckets, chains or gears—nothing to break or wear out. Only ONE moving part—a small steel fan. Elevates 30 feet or more—300 to 800 bu. an hour—blows out filth, grades grain and saves screenings. 6 H. P. runs it. ONE MAN can move it. Costs only HALF as much as old-style elevators. Thousands in use—every one a success. Get yours NOW.



Link Tractor Tender

Keeps fuel, oil and water in the field and the tractor on the job. Hitch it behind tractor and take it anywhere. Carries 2 drums or barrels on main axis and 2 smaller containers on tongue rack. Does away with waiting, worry and waste. Sold completely equipped or you can use your own barrels.

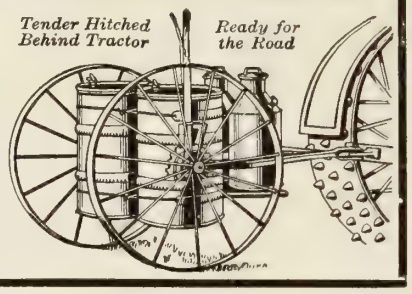
Automatic Tilt

All Makes of Steel Barrels Fit It.

NOT A DROP WASTED.

Tilting lever, with ratchet, enables you to bring drums to any angle **with one hand** and lock them there. No struggling, lifting, splashing or spilling. You get ALL the oil or fuel. A great money saver. Makes tractor work easy and rapid.

Tender Hitched Behind Tractor *Ready for the Road*



FREE Books and circulars describing these two profit makers. Just send your name—a post card will do. Write **Today.**

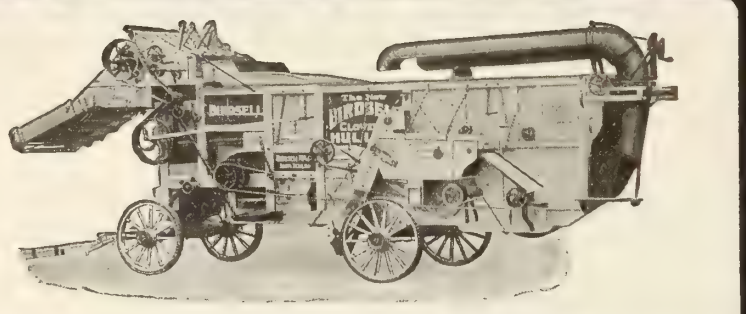
LINK MANUFACTURING CO.,

Dept. 714 PORTAGE LA PRAIRIE, MANITOBA.

DEALERS: Your customers want these two machines. Write us NOW.

BIRDSELL CLOVER HULLERS

Best for Threshing, Hulling and Cleaning { Little Red or Common Clover Seed; Big English or Mammoth Clover Seed; Alsike Clover Seed; Sweet Clover Seed }



THREE SIZES FOR CANADA

			Power Required
No. 2	Cylinders 27" x 32",	Capacity 3 to 5 bushels per hour,	6 to 8 H. P.
No. 1	Cylinders 30" x 36",	Capacity 5 to 7 bushels per hour,	8 to 10 H. P.
No. 8	Cylinders 40" x 52",	Capacity 7 to 10 bushels per hour,	10 to 12 H. P

WE HAVE A SIZE TO SUIT EVERY NEED

ANN ARBOR HAY PRESSES

If in the market for a Hay Baler we can furnish in any size to meet your requirements. Write us or call and see us while in the city.

Birdsell Manufacturing Co.

Foot of George Street

Toronto, Canada

NEWS — OF THE TRADE FOR THE TRADE

ALBERTA

KITSCOTY.—Messrs. Parsons and Phillips have purchased the implement business formerly conducted by G. W. Phillips and Son.

CARDSTON.—The Central Garage Co. have purchased the premises formerly occupied by D. Aldridge, and are removing their implement stock and repairs to the new location. The building is being re-arranged, with new floors and other improvements.

BRITISH COLUMBIA

LANGLEY PRAIRIE.—A new garage, 40 x 70, is being built by P. F. Cagnacci.

VANCOUVER.—J. Diebolt and D. K. McLeod, operating under the name of the Star Garage, have opened an up-to-date auto repair business at 1060 Nelson street. The garage building is fire-proof throughout, the construction being of steel, concrete and hollow tile. There are two floors, providing storage for 90 cars. The most modern equipment is installed.

NORTH VANCOUVER. — Messrs. Dennis and Branscomb have opened a garage business in Larson's Pavilion and are effecting extensive improvements. A full line of modern equipment is being installed to handle all kinds of auto repairs including oxy-acetylene welding, cutting, brazing, etc. Free air and other conveniences such as a rest-room, etc., are provided for motorists.

MANITOBA

ROLAND. — Messrs. Stewart and Preston are operating a new farm implement business here.

McCONNELL.—A new garage and implement business has been opened here by Richardson Bros.

DAUPHIN. — The Ramsay-Rogers Co. have reorganized their repair department and are now handling repairs on all makes of cars.

HARTNEY.—C. Sommerville is an automobile and farm machinery dealer here. He handles autos, repairs, tractors, farm lighting plants, threshers and implements.

PILOT MOUND.—A. H. Gibbs and Son have moved their garage to more commodious and up-to-date premises. They handle automobiles, repairs, tractors and farm implements.

BOWSMAN. — Messrs. Gordon & Girard have opened the Bowsman Garage and will handle all kinds of automobile repairs. The partners also handle a full line of farm machinery.

ONTARIO

TORONTO.—A garage will be erected on Danforth Avenue by A. Clancy at a cost of $20,000.

MITCHELL.—D. Brand, of Lucan, is moving here to look after the interests of the Imperial Oil Co.

GRANTON.—W. N. Gunning, automobile and hardware dealer, is erecting a large addition to his garage.

CHATHAM.—The British American Oil Company purchased a site here recently and will erect an oil and gasoline service station.

HAMILTON. — The Special Auto Service Co. will alter a building for a garage at a cost of $10,000, and will also erect another garage on Dundurn Street north.

SASKATCHEWAN

LEIPZIG.—W. J. Brechin is conducting a new farm machinery business here.

KENASTON.—A new implement concern is operating here under the name of Oueliette Co.

CREELMAN.—The Creelman Motor and Tractor Co., Ltd., have increased their capital to $20,000.

MILESTONE.—S. Strickland has moved into new quarters where he has a fine automobile show room.

DUNBLANE.—J. L. Williams has taken over the implement business formerly conducted by D. Chittick.

WAKAU.—J. H. Flynn is an implement dealer here, handling tractors, engines, threshing machines, buggies, etc.

DUBUC.—Wright, Son and Trelee, implement dealers, have extended their premises, adding an up-to-date repair and spare parts room.

ARCOLA.—E. T. Wright, implement dealer, has remodelled his warehouse, putting in an up-to-date showroom and office and repairs room.

ROULEAU.—The Excelsior Garage, operated by T. W. Moore and Son, is now equipped to handle all kinds of repairs, including tire and battery repairs.

ESTEVAN.—P. L. Miller, formerly a blockman at North Battleford for the International Harvester Co., has been transferred to the Estevan branch to be assistant manager.

SASKATOON.—The John East Iron Works, specialists in all branches of automobile and machinery repairs, recently added to the auto repair equipment a modern cylinder grinder.

WEYBURN.—The Ford Garage on Second Street has been considerably enlarged and decorated. The floor space for the garage business at the rear has been doubled.

REGINA.—The provincial executive of the Red Cross Society at a recent meeting decided to equip two automobiles as travelling dental parlors to look after the dental requirements of children in outlying settlements.

SASKATOON.—A new automobile show-room will be erected on Third Avenue by the J. H. Early Motor Co., Ltd., having a frontage of 100 and a depth of 140 feet. The Early Co. are Studebaker distributors for Northern Saskatchewan.

SASKATOON—The William Motor Co., distributors for Maxwell and Chalmers' cars and Maxwell trucks, announce the appointment of J. J. Olmstead, who formerly conducted a garage and automobile business in Saskatoon, as manager of their Saskatoon branch.

IMPERIAL
Lubricants
FOR ALL FARM PURPOSES
IMPERIAL POLARINE OIL
IMPERIAL POLARINE OIL HEAVY
IMPERIAL POLARINE "A"
IMPERIAL POLARINE KEROSENE TRACTOR OIL
IMPERIAL POLARINE KEROSENE TRACTOR OIL EXTRA HEAVY
IMPERIAL PRAIRIE HARVESTER OIL
IMPERIAL GRANITE HARVESTER OIL
IMPERIAL CAPITOL CYLINDER OIL
IMPERIAL GAS ENGINE OIL
IMPERIAL POLARINE CUP GREASE
IMPERIAL THRESHER HARD OIL
The Cheapest Farm Lubricants You Can Buy
IMPERIAL OIL LIMITED
Power - Heat - Light - Lubrication
BRANCHES IN ALL CITIES
But All Alike

Backed By Two Big Selling Forces

IMPERIAL Lubricants are backed by two powerful selling forces that are always on the job. One of these is continuous advertising which reaches practically every Canadian farmer. The other, which is even more effective, is the very quality of the oils—they sell themselves.

You sell farmers their implements. Naturally they expect you to tell them what oils to use. Why not go a step farther and supply them with Imperial Lubricants? By doing so you insure satisfaction with every tool you sell and, in addition, establish a good-paying, year 'round oil business.

Stock up with the full line of Imperial Lubricants and you can meet every need a farmer has. Imperial Lubricants give the kind of satisfaction that brings customers back again and again. They attract other farmers, too, and open up new trade in implements as well as oils.

Let the Imperial Oil Salesman tell you all about our attractive dealer agreement—it will interest you.

IMPERIAL OIL LIMITED

Power - Heat - Light - Lubrication

BRANCHES IN ALL CITIES

More Work With Grain Binders

By E. P. STAHL, Hyatt Roller Bearing Co.

THE grain binder is one of the most essential of all farm machines. Few machines have contributed as much toward the cost of food. By its aid one farmer can do as much work in a day as could formerly be done by twenty-five or thirty men cutting grain with a sickle and binding by hand.

Investigations carried out with a view toward finding out the actual amount of work that is accomplished with the binder have revealed the following:

Grain binders drawn by three horses are able to do 1.85 foot acres per day. A machine drawn by four horses 2.15 foot acres per day; and when drawn with five horses, 2.25 foot acres per day. From this it is easy to determine the number of acres that machines of various sizes will cut in a day. It is merely a question of multiplying the length of the sickle bar by these figures. For example, the eight-foot machine, drawn by four horses, would cut 2.15 x 8. which is 17.2 acres.

Theoretically, however, an 8-foot binder, drawn by horses walking 2 1-4 miles an hour, (which is the gait at which horses ordinarily work) would cut 21.8 acres in a 10-hour day. The difference of 4.6 acres per day between the practical and the theoretical represents the loss that occurs each day due to the time required to oil the binder and rest the horses.

It is common practice to oil the entire binder before starting out in the morning and also every three or four hours during the day.. Furthermore, it is frequently necessary to make minor adjustments. Such interruptions mean reduced work for the mow, the horses and the binder. They take up valuable time that might otherwise be devoted to the work of cutting.

Binders of these large sizes have been on the market for some time. Their use in the hands of farmers has shown decided advantages. They have met with great favor throughout the Grain Belt—particularly at this time when the matter of reducing costs of grain per bushel is of utmost importance.

The Advantages of Anti-Friction Bearings

These large binders have been improved so far as construction is concerned and are made slightly heavier and considerably more reliable. They are equipped with non-adjustable, anti-friction bearings throughout, which means that such vital parts as the shafts, gears and sprockets are kept in proper relation to each other and are able to perform with utmost reliability.

The result is that these machines can be run throughout an entire season with but the greasing or oiling that they would get at the beginning of the season. It also means that the draft per foot cut is decidedly less than with the other machine even in the very best conditions.

Such a binder, although 10 feet wide, is just as convenient to handle in the field and just as easy to move on a transport truck.

For the sake of comparison of work that might be accomplished with the 10-foot machine, we will refer to the foot acres cut by a machine drawn by five horses, as mentioned in a preceding paragraph.

From this it will be seen that a 10-foot machine would cut 22 1-2 acres per day against 18 acres per day with an eight-foot machine which is the largest that has been used for horse work. This is when used with horses at a speed of about 2 1-4 miles per hour, but a tractor can easily travel 50 per cent. faster, or 3 3-8 miles per hour, which means that 33 3-4 acres per day can be cut with a 10-foot machine. Investigations cutting wheat, revealed that the average six-foot machine, drawn by three horses, cut 10.4 acres per day. Other investigations cutting oats, revealed that an eight-foot binder, drawn by four horses cut 17.9 per day.

It was also found that cutting oats with a seven-foot machine, drawn by four horses, the average was 15.2 acres per day.

These figures are all surprisingly low as a result of the time losses mentioned above.

Influence of the Tractor on Binders.

Binders used in combination with the tractor are frequently run at longer intervals of time without oiling, owing to the fact that the tractor, unlike the horse, does not need to be rested. This means that the binder is worked very hard, and that it wears out proportionately faster. Investigations made in the field prove that a binder designed and built for horse work may be completely worn out in one-half season's run when used behind a tractor. This is due to two reasons: First, that it is not oiled so often; in fact, as often as is necessary. Second, because it travels at a considerably higher speed.

The advent of the tractor brought about a demand for a machine that would perform at a higher rate of speed and without the necessity of frequent attention. The greater amount of power available with the farm tractor as compared with the horse makes it logical to use larger units in a binder, just as has been done in the case of other farm machines.

Farmers who use these special binders in combination with the tractor report that they can easily cut between 40 and 50 acres per day. In many cases even more than that has been accomplished, but the average will fall well within the figures given. This is all the way from two to three times as much as the present binders do per day. The farmer can readily see what it means to increase the work in the proportion.

To do twice as much work in one day with a machine built for tractor work means that even though its selling price might be twice as high as a single binder, it would still be an economic investment. The advantage of doing this quantity of work with one man instead of two will more than prove its economic advantage.

Another decided advantage of the anti-friction bearing equipment is that the draft of a plain bearing machine is a little more than 16 per cent. greater. Figured out in percentage of draft per bundle cut and tied, it has been found that the plain bearing machine requires nearly 25 per cent. more draft.

It was discovered by tests in the field that the tractor binder can be used successfully at speeds up to 3 1-2 miles per hour. It was also found that the draft decreased about 10 per cent. with increased speed.

Of course, if draft were figured on a basis of bundles, it would mean that a plain bearing machine would require about 50 per cent. more power per bundle than one equipped with anti-friction bearings.

In a test of the Moline ten-foot binder running at 1.51 miles per hour 15 bundles per minute were cut and bound. At a speed of 2.71 miles per hour 35 bundles were cut and bound per minute.

All these factors contribute toward a successful and economic binder performance. They are all problems in which the dealer and farmer are keenly interested. They result in a lower labor and machine cost per bushel of grain, which means greater profit for the farmer, because the cost per bushel for the grain grown is thereby reduced.

EMPLOYEES BONUSES

THE Hart-Parr Co., Charles City, Ia., recently distributed to its employees, who were eligible under the continuity of service participation plan, checks for their share of the profits of the 1920 business. This plan was announced by the Hart-Parr Co a little over a year ago to apply to those supervisional employees who had been in continuous service with the company for a period of two years prior to January 1, 1921. Checks ranging from $10 to over $500 were distributed, according to the length of continuous service with the company.

The results of this plan, the company states, have more than justified their faith in it. It has instilled a wonderful spirit of co-operation and resulted in much keener interest of the individual workman in his work.

The meeting at which the bonus checks were distributed was one of the most enthusiastic ever held.

ALL STANDARD TIRES REDUCED

A REDUCTION of approximately twenty per cent. in the price of tires was announced recently by all the standard tire companies of Canada. The new prices went into effect immediately.

He Forced Sales to Come His Way

THERE is one section of Manitoba, Canada, where everybody knows Charlie Congdon. Three good reasons for this tell the story of his success in the implement business.

Practically every farmer is using one or more machines which he purchased from Charlie, who by the way gets his mail at the Newdale post office but is more closely associated with the country roads and farms of this district.

Everybody likes Charlie.

And the third reason is, he's all business all the time. He's full of energy, absolutely dependable in his sales arguments, and he looks diligently after his customers after they have signed and taken delivery. When a farmer becomes a prospect he has just started a long course of pleasant relations with Charlie.

Mr. Congdon goes at every task in his own way. Sometimes that is the conventional way, sometimes it isn't. After the first of May he has no use for hat or coat and you are likely to see him, any time anywhere in the country after that, on his way from the 5 a.m. train with a salesman at his side or knocking at the front door of some farmer who is himself trying to beat the sun getting out of bed.

Dawn holds no preference for Charlie either. You are just as likely to pass his lights at midnight if the hour happens to find him with one more prospect to see before hitting the garage. How could anybody else be first to a prospect with this kind of energy to surpass?

It's the same way in everything else he does. Let him get a good hot prospect for a thresher and he's off with the farmer for the branch house to inspect a sample and close before the business spirit cools.

The restless speed, this canny alertness, got him the reputation for having sold the first Titan 10-20 tractor in western Canada. He had got wind of a group meeting of branch house managers and salesmen at Brandon in 1915. He heard that the then new Titan would be there for introductory purposes. Just as soon as he could get the ear of the meeting's manager he arranged for taking this first Titan home. It's working today on the farm of one of his customers to whom he sold it the very day of its arrival at Newdale. More than fifty tractors have since followed this introductory sale.

What is there back of this phenomenal energy and forehandedness? A present annual business of from $150,000 to $200,000, greater possibilities for the future, the respect of his community, and the satisfaction of being able to do something a little better than it had ever been done before.

Mr. Congdon didn't just blossom out one morning with a business ready developed and going. He traveled the well worn road whose rough places and obstacles are known to most of us. It was not the nature of the road; it was the way he negotiated it that made his success.

Charlie Congdon has by birth the mental viewpoint of the implement dealer. His father was the first Deering agent at Rockwood, Ontario, more than twenty years ago and the son was around the store almost before he was out of dresses. He mixed fishing with helping his father sell and service the farmers. I suppose he heard the West calling as it does to pioneering spirits in the States because he went out to Winnipeg one fine day and started to work for the McCormick Company. This was still implement business but a step removed from contact with the farmer. So he dropped back to the retail side, working for local agents in Manitoba, and finally signing up with J. H. McLean at Shoal Lake, Manitoba.

He soon got ripe for trying this business he was getting to know so well, and in 1909 he started his own establishment at Newdale. You have already read of the business he has developed in the last twelve years and can surmise that that is probably only a station along the way and far from the terminal of his business progress.

Naturally a man of this make-up has an up-to-date repairs room where harvest service is given from 6 a.m. to 12 p.m., general office, private office and attractive display room where he takes prospects and shows them exactly how the machines operate, has them get on the seat and work the levers or hold imaginary lines on the wagon, or turn over the fly-wheel if it is an engine. He canvasses hard and steadily, advertises extensively, devises and carries through his own advertising campaigns. The prospect's sales-warrant almost invariably is signed the instant Charlie finds out he needs equipment or is going to buy or ought to buy. Rarely does a prospect succeed to a reprieve after once being disclosed a prospect.

Many dealers will read of this successful business man, and to them we have just one question to put—Has Mr. Congdon done a thing that you cannot do?—Harvester World.

How to Get Your Customer's Interest

To get the farmer interested in Tractors and Tractor Plows you must have a tractor and tractor plow that meet his requirements and give him satisfaction.

If you sell "Waterloo Boy" Tractors and John Deere Tractor Plows you are sure of the farmers' interest because both are built specially for Ontario farms. And the reputation for full value behind the John Deere line is often the factor that completes the sale, because the farmer knows that the name, John Deere, on any farm implement means the utmost in satisfaction.

John Deere No. 40 Tractor Plow is recommended for Fordson Tractors by the manufacturers: "This letter is to inform you that the John Deere No. 40 Plow has been approved by Mr. Henry Ford as a satisfactory implement to work in connection with the FORDSON Tractor. Please notify agents of this approval." (Signed) Edsel B. Ford.

"Waterloo Boy" Tractors develop 12 h.p. on the drawbar and 25 h.p. at the belt—just the size for the average Ontario farm.

John Deere Tractor Plows are built to stand the heavy work behind a tractor. Eighty years' experience in plow making goes into them.

Let us send you full particulars about the John Deere line. It is well advertised. There is a liberal dealer policy. In short, there is everything that makes it a profit-payer from the dealer's standpoint.

John Deere Manufacturing Co., Limited

Welland **Ontario**

DEPENDABLE EQUIPMENT

Weaver Shop Devices
Hart Storage Batteries
Dunlop and Gutta Percha Tires and Tubes
Partridge Cord Tires
Veedol Lubricants
Raybestos Brake Lining
McKinnon Chains
Curtis Air Compressors
Klaxon Horns
Canada Vulcanizers

Immediate Delivery from Our Large Stock.

Our Policy—Full Co-operation with the Dealer.

DEALER'S PRICES QUOTED TO LEGITIMATE TRADE ONLY.

KEYES SUPPLY CO., LIMITED

Q 471 **OTTAWA** Q454

That handy little cake of Klearsight

A Friend to Motorists

Klearsight not only keeps moisture off the interior of the windshield, it also cleans and polishes brass and nickeled parts and protects them from the weather.

Klearsight is just about the handiest cleaner a motorist could wish for—keeps everything spic and span and makes for safe driving in rainy and foggy weather.

Put in a supply of Klearsight and then give a few demonstrations next time a rain comes. You'll soon have a steady sale of Klearsight that will net you a tidy profit.

Pasznicki Bros., Limited
21 Richmond St. W., Toronto

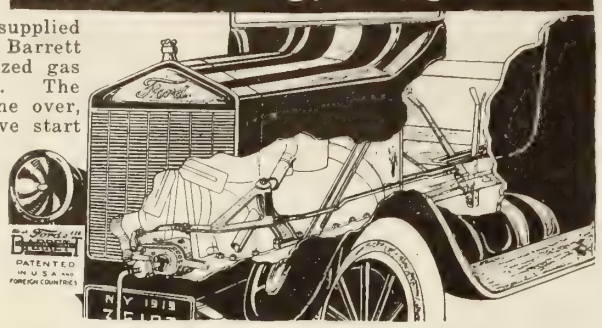
Starts the Ford instantly in any kind of weather

A cold Ford engine is easy for the Barrett Self Starter and Primer. The Primer (supplied free with every Barrett Starter) sprays vaporized gas directly to cylinders. The Starter turns the engine over, thus ensuring a positive start every time.

Easy to install, no holes to drill, no cables, no chains, no pulleys, no springs to wind, no danger from backfire, noiseless. Endorsed by Ford experts. Guaranteed for five years.

A proposition will be made to live dealers—write at once.

BARRETT
SELF STARTER AND PRIMER
GUARANTEED FOR FIVE YEARS — For all Fords — $40



Imperial Agencies, 81 Victoria Street, Toronto

MAYBE ADAM LAUGHED AT THESE

Mrs. Lanigan — They say that if yez keep anything for siven years, yez will find use for it.

Mrs. Flanigan—Is thot so? How about a bum husband?—Judge.

The Prisoner.—Your honor, it is true that I was speeding, but I can explain if you will give me a little time.

His Honor—Ten Days.—Carolina Tar Baby.

"Remember, Charlie dear, I always love like this," she sighed as she nestled a little closer to him.

"Yes! Yes!" murmured he absently. "So I have heard! So I have heard!" —Lehigh Burr.

"I'm not quite sure about your washing machine. Will you demonstrate it again?"

"No, madam. We only do one week's washing."—Louisville Courier-Journal.

"Pa, what are ancestors?"

"Well, my son, I'm one of yours. Your grandpa is another."

"Oh! Then why is it people brag about them?"—Boston Transcript.

History Prof.—"Mr. Green, will you describe the charge in which the Russians took the Oder?"

Green.—"Why—why I didn't know they took it; I thought they always had it!"—Michigan Gargoyle.

"Julia," her father called from the top of the stairs, "did I hear a smack down there just now?"

"If you did," she replied, "you're a wonder. I've been hoping to hear one all evening."—Oregon Farmer.

Magistrate (to Scotchman charged with assault)— The most brutal attack I ever heard of. I've a good mind to send you to prison for six months!

The Prisoner—You canna dae it. I told ye, mon, I'm only down to London for the week!—Passing Show.

"So you represent the Noocar Company, do you?"

"Yes, sir."

"Good company?"

"Best going."

"Who's behind it?"

"All our competitors," said the agent. —Boston Transcript.

"You've got t' git rid o' that new hired man out'n th' field, Hennery."

"Huh? Ain't he workin' right, Mary?"

"Workin'! He ain't done nothin' all this livin' mornin' but stan' out there arguin' with that scarecrow 'bout politics!"—Richmond Times-Dispatch.

"We know what matrimonial bonds are."

"Yes?"

"Well, what would you call divorce papers?"

"I dunno—what would you call them?"

"Why, I'd call them liberty bonds." —Atlanta Constitution.

"That's a plucky pedestrian, anyhow."

"What did he do?"

"Dared the man who ran over him to try it again."

"Did the motorist accept the challenge?"

"No. He said it nearly broke his heart to pass up a chance like that, but he was on his way to meet a train." — Birmingham Age-Herald.

When a lady who was "burning up the road" on the boulevard was overtaken by a traffic officer and motioned to stop, she indignantly asked:

"What do you want with me?"

"You were running forty miles an hour," answered the officer.

"Forty miles an hour? Why, officer. I haven't been out an hour," said the lady.

"Go ahead," said the officer. "That is a new one on me."—Pittsburgh Dispatch.

"Some years ago," says an American who used to live in London, "before Queen Victoria's death and about the time the Queen's Jubilee was to be celebrated, there was overheard this conversation between two old Scotchwomen on a street corner:

"'Can ye tell me, wumman, what is it they call a jubilee?'

"'Weel, it's this,' said the other. 'When folk has been married twenty-five years, that's a silver wuddin'; and when they have been married fifty years, that's a golden wuddin'. But if the mon's dead then it's a jubilee.'"—Philadelphia Public Ledger.

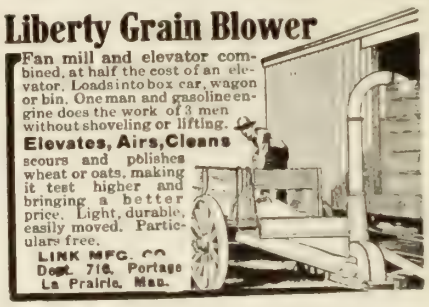
GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

Liberty Grain Blower



Fan mill and elevator combined, at half the cost of an elevator. Loads into box car, wagon or bin. One man and gasoline engine does the work of 3 men without shoveling or lifting.

Elevates, Airs, Cleans

scours and polishes wheat or oats, making it test higher and bringing a better price. Light, durable, easily moved. Particulars free.

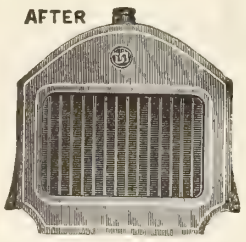
LINK MFG. CO.
Dept. 716, Portage La Prairie, Man.

BEFORE

Give your customers this specialized service

Use our repair establishment just like a department of your shop. Send damaged fenders, lamps, radiators, etc., to us and give your customers a highly specialized service without sacrificing any of your profit.

AFTER



Our staff is composed entirely of experts.

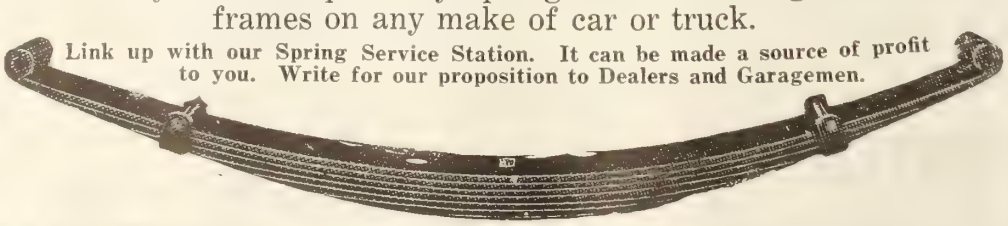
Write for our interesting proposition

WHITE & THOMAS, 210 Simcoe Street, TORONTO

"Special Springs to Order"

Don't be "stumped" by a request for an "out-of-the-ordinary" spring. Rely on us, we can produce anything in the way of a spring besides being specially equipped to fit any car or repair any spring. We also straighten axles and chassis frames on any make of car or truck.

Link up with our Spring Service Station. It can be made a source of profit to you. Write for our proposition to Dealers and Garagemen.



COZENS & MAYNARD, Automobile and Truck Spring Service Station, 4 to 6 Wood St., TORONTO

THE HOAG OIL ENGINE

THE Hoag oil engine, manufactured by the Hoag Oil Engine Co., Ltd., Brantford, Ont., uses the super-Diesel principle of burning fuel, the same as that used in submarines and other large ships where extreme reliability and economy of fuel are necessary.

The Hoag engine starts on the fuel it runs on, kerosene or crude oil, and has no electrical equipment or carburetor. Ignition of the fuel is obtained by the heat of compression. By referring to the section view of the combustion chamber, the principle of the operation is as follows:

First: On the suction stroke pure air only is drawn into the cylinder. The fuel is admitted through the fuel pipe "I" into passage "B," where it flows down around the needle valve stem "C." This needle valve is controlled by the action of the governor and varies the amount of fuel according to the load on the engine. During part of the suction stroke valve "E" is opened mechanically and the fuel runs into the fuel cup "F," which is connected with the main cylinder by small holes "G."

Second: On the compression stroke, the air previously admitted to the cylinder is compressed to about 400 pounds per square inch, which heats it to about 900 degrees Fahrenheit, or until it is what you might call red hot.

Third: As the temperature of the air in the cylinder rises, due to compression, the fuel cup "F" gets very hot and boils the fuel in the cup. As the pressure within the cup rises above that in the cylinder it forces the oil out through the holes "G" in the form of spray as indicated by "H," which, on coming in contact with the hot compressed air in the cylinder, is ignited and burns; forcing the piston out on the power stroke.

This new application of a well-known principle is the invention of a Danish engineer, R. M. Hvid, patented throughout the leading countries, and has been in successful operation for several years.

NEW CANADIAN-BUILT CAR.

THE Brock Six is the latest addition to the list of Canadian-made cars. It is being built in Amherstburg, Ont., by Brock Motors Ltd.

The motor is a Herschell-Spillman Model No. 1100, en bloc, six cylinders, L-head, removable cylinder head, 3¼ x bore and stroke developing 57 h.p. at 2,000 r.p.m. Front axle is a drop forging "I" beam heat treated. Rear axle is an assembly of standard parts with special reduction for Canadian adjustment from the rear. Carburetion is Stromberg. An intake manifold of latest economy design is built integral with the cylinder block. The radiator is a Fedders, ribbon type and circulation of water in the cooling system is by pump. Lubrication is combined direct force feed and splash. Electrical equipmnt is Bosch starting and lighting, Connecticut ignition, and Prest-O-Lite battery. Feed is by vacuum from a large armored tank at the rear. Clutch is Hoosier dry plate. Transmission is Warner selective sliding gear, three speeds forward and reverse. The gears are of chrome vanadium steel, unit with motor, and attached to them is a Kellogg tire pump. Torque is taken through the springs. The propeller shaft is tubular and equipped with disc universals. Springs are semi-elliptic. 38 inches long in front and 56 inches in rear. They go flat under load thus affording maximum resiliency. Service brake operates on the transmission. The emergency brakes are internal expanding. The steering gear is the Lavine irreversible type, and is adjustable to different pitches to suit driver. Tires are 33 x 4½. Wheelbase is 122 inches and weight 3100 lbs. Equipment includes Boyce Monometer, one-man top, plate glass rear window, adjustable curtains opening with doors, robe rail, pump, jack, tool kit, speedometer, horn, tire carrier, demountable rims and one extra rim.

PAGEANT OF AUTOMOTIVE PROGRESS

PLANS for the presentation of the most comprehensive educational exhibit of the automotive industries ever attempted are being made by C. R. Richards, dean and director of the Engineering Experiment Station, University of Illinois, for the Pageant of Progress exposition on the Municipal Pier, July 30 to August 14. Everything that goes to make up an automobile, a motorcycle or an airship will be in this division. The oldest styles of cars and aeroplanes to the most modern of 1921 will be displayed. There will be model factories and actual working exhibits.

Developments of the mechanism of automobiles and trucks will be shown—types of engines, exhibits of early motors, the trend of design in the development of the engine, including its cooling and lubricating system, the carburetor, gasoline tank and methods of starting; the transmission system, electric system and the development of tires. This latter exhibit would include a comprehensive display of various types of wheel construction, demountable rims, and strides made in the manufacture of pneumatic and solid tires. An electric dynamometer with some form of modern automobile engine mounted on it and operated will be one of the interesting features of the exhibit.

Development of materials employed in automobile construction will be shown, such as alloy steels and the various ingredients contained in each brand, in bottles, in the proportion used in the sample bar of steel exhibited. The heat treatment of steel would be a part of the display, as well as an exhibition of methods used in investigating the fatigue phenomena of metals and some of the striking results obtained along this line at the experiment station of the University of Illinois.

An automobile testing plant will be there. In this will be a chassis, stripped of body and other parts so the operation of all the mechanism will be visible. There will be general exhibits of 1921 cars, trucks and accessories. The display will include electric autos, showing the different types of storage batteries and their method of operation and styles of motors with their control and transmission systems.

The progress made in highway construction may form part of this section of the exposition—exhibits of photographs and models of various types of roads with special reference to the influence of the automobile and the motor truck on the development of highway construction.

Dean Richards, who is the automotive section educational chairman, suggests that the tractor exhibits be placed with those of agricultural machinery in the section devoted to agriculture. This is due to the big demand for space in the automotive section.

PROJECTED MOTOR EXHIBITIONS IN LONDON, ENGLAND

THE Society of Motor Manufacturers and Traders, Limited, London, announce that they intend to organize the following exhibitions: The Fifth International Commercial Motor Exhibition — for gasoline, steam and electric vehicles for goods and passenger transport and general utility purposes — which will be held at Olympia, London, W., from October 14 to 22, 1921; and the Fifteenth International Motor Exhibition—for passenger motor cars—at Olympia and White City, London, W., from November 4 to 12, 1921.

Inquiries on behalf of Canadian manufacturers intending to exhibit should be made to the Exhibition Manager, the Society of Motor Manufacturers and Traders, Limited, 83 Pall Mall, London, S.W.1.

EASY to sell the first time—Easier the second

Spedolene is more than merely "different." It is an entirely new idea in lubrication—in fact, the only lubricant in which heat-resisting asbestos is compounded with the best oils.

It is easier to sell than an ordinary lubricant—the first time. After that you don't need to push it—your customer will insist on it. Spedolene "goes over" the first time because of a new and different appeal; it "goes over" the second and all succeeding times because of a new and different lubricating value.

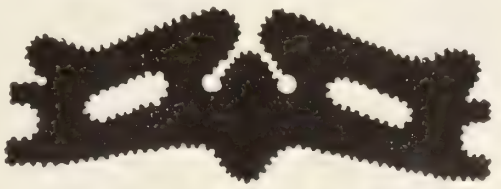
Spedolene works in all weathers, Winter and Summer.

SPEDOLENE REFINING & MANUFACTURING CO., Ltd.
MONTREAL

6" GAP—£76 Nett.—(Nett weight, with Stand, 437 lbs. Will cut any Sheet Metal up to 7 Gauge or 3/16".)
12" GAP—£80 Nett.—(Nett weight, with Stand, 494 lbs. Will cut any Sheet Metal up to 10 Gauge or 1/8".)

F.O.B. all United Kingdom ports. CASH WITH ORDER.
Immediate delivery guaranteed

WILSON'S
Patent "Nibbling" Machine
For the Rapid Cutting of Metals
In use in the workshops of leading Railway Companies, etc.



OLD WAY:—Takes 2½ hours.

NEW WAY:—(WILSON'S PATENT "NIBBLER") Takes 5 minutes

Wilson's Nibbler will quickly cut or perforate to any design all kinds of Sheet Metal.
The traverse of cut is in any direction following closely the outline of a template or graph without leaving the edge compressed.
It is an indispensable and economical unit for the making of Cast Steel Gauges.
It will cut any sheet metal at an **average speed of 18 inches per minute.**
It produces like a press at nearly its speed.
The job needs **no filing after leaving the machine.**
It takes very little room and requires under ½ horse power.

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This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

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Cozens & Maynard, 4-6 Wood St., Toronto.
Jos. O. Gourre & Co., Montreal.
Hercules Bumpers, Ltd., 4 Spadina Ave.. Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
Lamontagne, Ltd., Montreal.
Pasznicki Bros., 21 Richmond St. W., Toronto.
Shaw Auto Salvage Parts Supply Co., Toronto.
The Canadian Raybestos Co., Peterborough, Ont.
The Liberty Tire & Rubber Co., Montreal, Que.
White & Thomas, Toronto, Ont.

AUTOMOBILE LENS
Keyes Supply Co., Ltd., Ottawa, Ont.
McKee Glass Co., Jeanette, Pa.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILES
Motor Mart of Montreal, Montreal, Que.

AUTOMOBILE TIRES
Ames, Holden, MacCready, Montreal.
Jos. O. Gourre & Co., Montreal, Que.
The Liberty Tire & Rubber Co., Montreal, Que.

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BEAN MACHINERY
John Deere Mfg. Co., Welland, Ont

BEET MACHINERY
International Harvester Co., of Can.. Ltd., Hamilton, Ont.
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Birdsell Mfg. Co., South Bend, Ind.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING
The Canadian Raybestos Co., Peterborough, Ont.

BATTERIES

BUYING GUIDE
Canadian Machy. & Mfing. News, Toronto.

CARRIAGES

CREAM SEPARATORS
De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS
Joliette Castings & Forgings Ltd., Montreal and Joliette, Que.

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International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

CORN MACHINERY
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey-Harris Co., Ltd., Toronto.

CULTIVATORS
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Massey-Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smiths Falls, Ont.

CUTTERS
Butterfield & Co., Inc., Rock Island, Q.

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DeLaval Dairy Supply Co., Peterboro.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

DIES
Butterfield & Co., Inc., Rock Island, Q.

DISCS

DITCHING MACHINES

DRILLS, TWIST
Butterfield & Co., Inc., Rock Island, Q.

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International Harvester Co., of Can., Ltd., Hamilton, Ont.
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International Harvester Co., of Can., Ltd., Hamilton, Ont.
John Deere Mfg. Co., Welland, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

ENSILAGE CUTTERS
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FEEDERS
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FARM MACHINERY
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Cockshutt Plow Co., Brantford.
John Deere Mfg. Co., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Link Mfg. Co., Portage La Prairie, Man.
R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

FEED CUTTERS

FENCE POSTS
Burlington Products, Ltd., Hamilton.

FENCING
Burlington Products Ltd., Hamilton.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

GRINDERS
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International Harvester Co., of Can.. Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
S. Vessot & Co., Joliette, P.Q.

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Windsor Machine and Tool Works, Windsor.

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MANURE SPREADERS
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International Harvester Co., of Can., Ltd.. Hamilton, Ont.
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ROLLER BEARINGS

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John Deere Mfg Co Welland, Ont.
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R. A. Lister Co. (Canada), Ltd., Toronto
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Butterfield & Co., Inc., Rock Island, Q.

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Butterfield & Co., Inc., Rock Island, Q.

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Quality

"The Tools You Buy Again"

There is only one quality point you need to watch in buying drills, taps, dies, reamers and milling cutters, and that is to see that the name "Butterfield" is stamped on each tool.

Butterfield Quality has been for so long an actual accomplished fact—a reliable "something" that isn't found in other tools—that workmen who are particular insist on "Butterfields."

Longer life and keener cutting edges are results of Butterfield Quality.

Butterfield & Company, *Division*
Union Twist Drill Co.
ROCK ISLAND, QUEBEC

Toronto Office: 220 King Street West
Montreal Office: 131 St. Paul Street West

Sell the line already half sold

LISTER
Farm Machines

---the Business Builders

Actual value has assumed new proportions in farmers' eyes nowadays.

In a market of extremely careful buyers the Lister Line stands supreme by the strength of its Canada-wide reputation for genuine reliability.

So favorably is the line known that farmers know they cannot go wrong on Lister Farm Machines. Our message to you is: "Sell the line that is already half sold." That is the way to keep business going strong!

Lister lines include: Melotte Cream Separator — Lister Milker — Lister Farm Engine—Lister Grain Grinder —Lister Premier Cream Separator —Lister Silo Filler.

R. A. Lister & Co. (Canada) Limited

Stewart St. (near King and Bathurst), Toronto or at Wall St. and Portage Ave., Winnipeg

T

If you hope to sell him something else

If every time you sell a piece of equipment, a machine, or a part, you are hoping it will lead to a further sale, you'll be interested in the "Vessot" agency proposition. "Vessot" Feed Grinders will give your customer more satisfaction, less trouble than any other grinder you could sell him. He will not require to have any particular knowledge of milling to get just the results he wants—the "Vessot" is so easy to adjust and operate.

Stake your reputation on the "Vessot." "Vessot" sales will open the way to sales of other farm equipment.

Write the nearest branch of the International Harvester Company for our worth-while agency proposition.

Inventors and Manufacturers

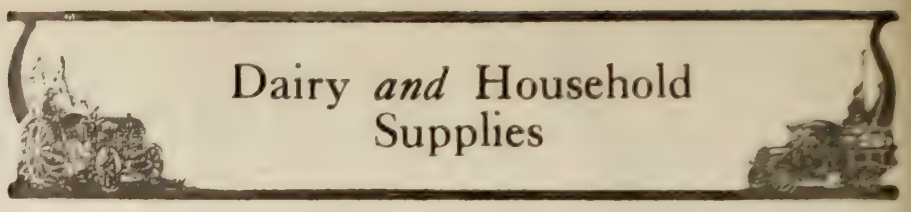
S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by

International Harvester Co. of Canada, Limited.

Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Estevan, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John.

Grinder with Elevator and Bagger



SALES PLAN TO SELL CREAM SEPARATORS

THERE are many ways of doing the same thing and perhaps accomplishing about the same results, but there is usually a best way which saves time and is more satisfactory, says G. L. Busian in the De Laval Monthly.

The saying, "Conditions have changed," has become rather trite and tiresome, but it needs repeating over and over so we will not forget that we cannot expect results to-day unless we change our methods to "fit in" with the needs of the hour.

In reality we are not confronted with new conditions at all. As one man puts it, "It's not hard times coming—it's just soft times going." In other words we are simply back to the good old days when sales effort and advertising effort, backed by sales planning, brought good results. The conditions to-day demand just those same efforts —plus—to bring business.

The facts are that in the easy buying (not selling) days people bought separators who did not need them one-half or one-fourth as badly as they are needed to-day. Your customers have "tightened up" and are not buying even when their needs should be plainly apparent to them, but they can be sold.

The whole answer is in adopting the plan that will win—and country work supplies that need. There is no question about it. Dealers and travelling salesmen are finding it possible to do a splendid business by going out with a machine and meeting the farmers right in their own homes.

So this is the first step in our 1921 plan. "Get Out into the Country."

Much of the misunderstanding and antagonism now felt by farmers fades away when you go to them as a friend who is ready to render a real service to them.

The second step is "Get into the House."

There never was a time when farmers needed friendliness more than now. There is something about a visit to the home and getting the confidence and good-will of the whole family that is more important to-day than ever before. Invite yourself in with some tactful remark, if they do not ask you in. Some dealers come right out and say "I'd like to come in if I may and just talk this thing over with you. I won't abuse your hospitality—and if you say so we won't say anything about your buying a separator. I want you to feel when I've gone that we have had a good visit—and that we have both profited by it, whether we do business or not." The door is almost invariably opened with a hearty "Sure—come right in and sit down a while."

The next step is "Get the Man and Wife Together."

The woman on the farm has always been a factor in the purchase of a cream separator and this is doubly true to-day. She is just as much interested as Friend Husband in economic conditions—and frequently sees the fairness of your position and their real need for a separator before he does. Do not waste time by talking to the men folks in the yard. Get the partners together.

The next (and most important) step —"Get the Machine into the House."

Eighty-seven per cent. of what we know has entered our consciousness through the eye. No amount of "sales talk" can take the place of an actual demonstration. Lead up to some point and show that you could "explain it so much better if I had the machine right here." In nine cases out of ten they will be glad to help you in with the separator, and then the battle is practically over.

By this time you know whether you should take it apart and show the fine mechanism or devote more time to the bowl and the care of the machine. Let them handle the parts as you describe them. Most people are "lifters" rather than "lookers" or "listeners." In many cases the impression of quality has been driven home without a word by simply tapping the supply can with the wrench—or by striking the tin ware with the knuckles.

During this time you have studied your customer and you know what methods are best to follow.

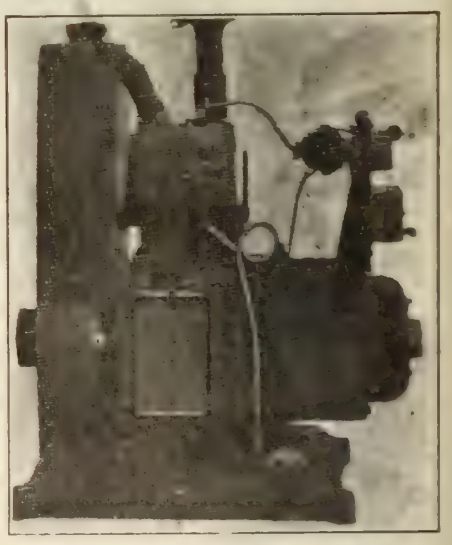
The last step is "Closing the Sale."

If you have followed the plan as outlined, the chances are that the separator will have sold itself.

The cream separator fits better than most any other line into a country "good-will sales campaign." It can be carried in a compact and convenient form in any kind of a conveyance. If necessary every part can be taken out and the workmanship and material shown in a few minutes. Then after this is done an actual skimming demonstration can be made if there is any question about its efficiency or earning power.

NEW FARM LIGHTING PLANT

THE Hanover Utilities Corporation, of New York, recently put on the market a new lighting plant, the normal capacity of which is 1½ K.W. at 1,250 r.p.m. on lamp load. The motor is a 4-cycle, 4-h.p., water-cooled. Ignition is by timer and coil. It is cooled by thermo-syphon system with 25-gallon tank and cellular type radiator. The makers claim that the motor will operate for 4½ hours on a gallon of kerosene or gasoline. The generator is bipolar shunt-wound ball-bearing type, with compound winding for starting. It is cooled with extra large individual sirocco fan, enclosed. The switchboard equipment is optional, either with Sangamon ampere hour meter or high-grade ammeter, reverse current relay and starting and stopping switch combined. The wiring is according to underwriters' specifications. The plant weighs 435 pounds crated, and is fully guaranteed for one year.



New Hanover 1½ K.W. Farm Electric Plant

You Win Both Ways—

IMPLEMENT dealers who sell Imperial Polarine win two ways. They assure complete satisfaction with every tractor they sell through its proper lubrication, and at the same time, they open up a big permanent trade in oil.

Year 'round advertising, backed by the dependable high-quality of Imperial Polarine, has made it the most widely used and quickest selling tractor oil in Canada. The market for Imperial Polarine is made—you can control this business in your territory if you go after it.

Make Imperial Polarine your leader. The good margin of profit allowed on each sale and the fast turnover that is assured make it one of the most profitable lines you can carry.

Sell Imperial Polarine as specified by our Chart of Recommendations. The satisfaction it gives when sold that way builds confidence in you which means increased implement and oil sales. Write to 56 Church St., Toronto, for Charts.

The Imperial Oil salesman will gladly tell you about our profitable dealer agreement. Ask him to-day.

IMPERIAL

Polarine

Kerosene Tractor Oil

A dark colored heavy-bodied oil suitable for kerosene and gasoline tractor engines. It protects rubbing surfaces from wear—reduces friction—maintains full compression.

Imperial Polarine Kerosene Tractor Oil Extra Heavy

A dark red-colored rich oil of extra heavy body—specially recommended for kerosene and gasolene tractor engines requiring an unusually heavy oil.

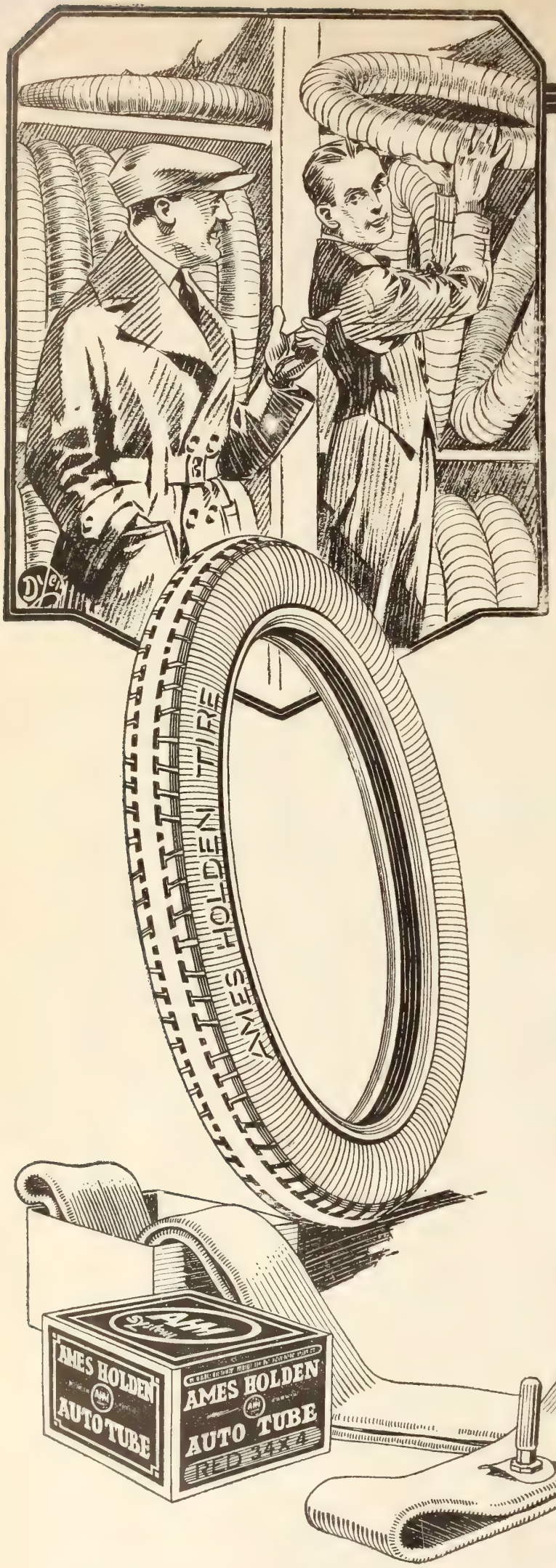
Imperial Polarine "A"

A dark red-colored oil of extra heavy body for air-cooled or water-cooled gasoline or kerosene-burning engines. Especially suitable for kerosene tractors and for motor cycles.

IMPERIAL OIL LIMITED

Power - Heat - Light - Lubrication

BRANCHES IN ALL CITIES



AHM System

Ames Holden "Auto-Shoes"

There are tires and tires—good, bad and indifferent. If we were content to stay in the rut we would use the word "tire," too.

But we have a better product—miles better in performance—and so we have decided to distinguish that product from the hosts of ordinary tires.

The name Ames Holden "Auto-Shoe" will help both the dealer and consumer to demand and get "Auto-Shoe" Value—backed by the "Auto-Shoe" guarantee.

This guarantee insures the life of an Ames Holden "Auto-Shoe" without time or mileage limit—against any defect in material or workmanship that may develop at any time.

Ames Holden "Auto-Shoes" are justifying the new name—piling on mileage over the highest average of ordinary tire performance.

They are made in all standard sizes, both Cord and Fabric, and sold at fair prices, making "Auto-Shoe" mileage the cheapest you can buy. Fit a set of Ames Holden "Auto-Shoes" and hold us responsible for results.

DEALERS!

Write for particulars of our sales policy on "Auto-Shoes." It offers you a fast and clean-cut proposition.

AMES HOLDEN "AUTO-SHOES"

CORD AND FABRIC TIRES IN ALL STANDARD SIZES

AMES HOLDEN

"Gray Sox" and "Red Sox" Tubes add to the mileage given by "Auto-Shoes"

MANUFACTURED BY

AMES HOLDEN McCREADY LIMITED

Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, London, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

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Gill

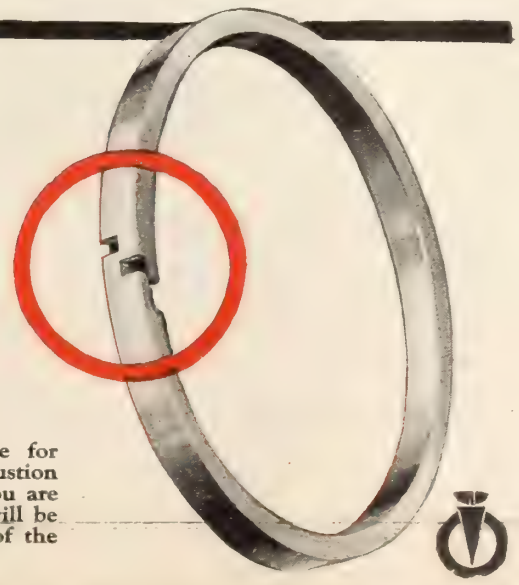
One-piece Piston Rings

last longer than others

because: through every process of manufacture they are handled with the utmost consideration and care. They are ***individually*** cast from a special gray iron that is heated not too hot, nor cooled too cool. They have an unusually ***close texture*** that cannot be disintegrated by the heat, or stress and strain of piston ring service. They are ***all*** subjected to a series of exacting tests. They are wrapped in ***moisture proof*** paper for packing. Precision prevails throughout the Gill plant.

MADE IN CANADA BY :

BROWN ENGINEERING CORPORATION, Limited
415-19 King Street, West Telephone Adelaide 425
TORONTO, CANADA



Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint ***alone.***

Gill Piston Rings are obtainable for every make of internal combustion engine manufactured. In case you are unable to secure Gill Rings, we will be glad to furnish you the name of the nearest Gill Jobber.

Stocks carried in all principal cities and towns of Canada by Canadian General Electric Company, Limited

Build Your Battery Business on the

HART

Storage BATTERY

The HART OF YOUR CAR

Hart Batteries are entirely made in our Canadian Works at St. Johns, Que.

Every part from the casting of the grids to the outer wooden cases is made under our own roof by Canadian workmen.

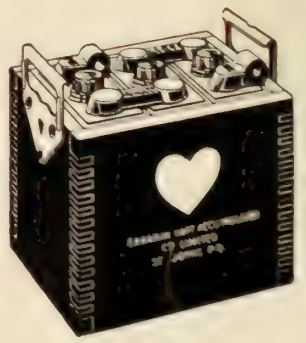
Hart Batteries are right chemically, electrically and mechanically.

Once they are sold they stay sold and the service station or dealer is able to bank the profit.

When once installed on a car Hart Batteries stay on their job through the hot summer days, through the rain and mud of the spring and fall seasons, and through the frost and snow of the severe Canadian winter.

Users of Hart Batteries save themselves money, time and anxiety and service stations and dealers are able to hold their original profit instead of eating into it in making subsequent repairs.

Write, wire or telephone us for our service station or dealer proposition.



ORDER A BATTERY AND SEE OUR LOCKNUT POST POLE SEAL

Hart Battery Company Limited

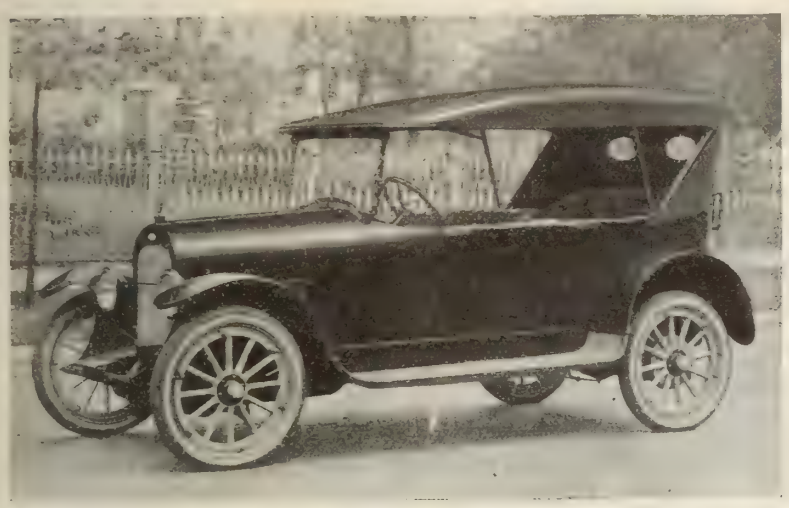
Sales Office: Drummond Building, Montreal, Works at St. Johns, Que.

Speed Sturdiness Comfort

Do you want this agency?

There is going to be somebody in your territory connect up with this "live" agency for a type of car that fills a long felt want, one that combines the luxurious fittings and power of a highly priced car with a very reasonable price.

Coupe and Sedan models equipped as the open models, but upholstered in beautiful blue broadcloth.



Touring and Roadster models are equipped with spare tire, front bumper, spotlight and combination mirror.

The Victory Car

The winner of the terrific grueling test over the Indianapolis Speedway on May 31st 1920, where the Victory Car was tried out over 500 miles of the hardest going that any motorist ever put a car to.

The features that caused it to win have been adapted for road and urban use and are linked with perfect completeness and symmetry of line and finish, making it a car that the most fastidious motorist will appreciate.

Wire or write us at once concerning this agency while it is available".

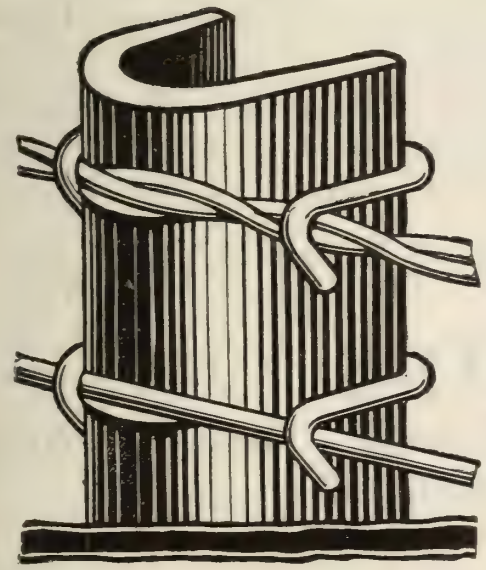
Motor Mart of Montreal

LIMITED

1-3 Park Avenue - Montreal

DISTRIBUTORS FOR CANADA

Have You Ever Dug Post Holes?



If you have you will realize what a back-breaking job it is and why farmers or any person putting up fencing wants

"Burlington" Steel Fence Posts

These posts are simply driven into the ground. No holes to dig or filling in neccessary.

Long life, strength and no sagging are other Burlington features that make sales certain.

This is a line you want to handle. Let us send you details.

Burlington Products Limited

316 Sherman Ave., N.

Hamilton --- Canada

AHM System

WHY "AUTO-SHOES"

Every casing is called a "tire." It is a word that conveys nothing about the character of a casing—its performance, value, reliability or origin. All casings, good or bad, have an equal right to be called "tires."

Which furnishes the best reason in the world why exceptionally good casings should have a distinctive name—a name that lifts them out of the rut—that implies superiority and character definitely—that identifies them immediately.

Reasoning that dictated the adoption of the name Ames Holden "Auto-Shoes"—based on the knowledge that Ames Holden "Auto-Shoes" are worthy of the distinction—that they will deliver more mileage—serve with absolute reliability and consistently give greater value for cost.

To add emphasis to our belief in the superiority of Ames Holden "Auto-Shoes" we back them with a guarantee that insures them to you against any defect in material or workmanship that might possibly show up at any time in the life of an Ames Holden "Auto-Shoe."

You buy on this guarantee—we adjust on this guarantee without quibble or red tape. Fit a set and put it squarely up to us.

AMES HOLDEN

"Grey Sox" and "Red Sox Tubes"

add to the mileage given by "Auto-Shoes"

"AUTO SHOES"

Mean Mileage That Costs Less

AMES HOLDEN "AUTO-SHOES"

CORD AND FABRIC TIRES IN ALL STANDARD SIZES

Manufactured By

AMES HOLDEN McCREADY LIMITED

HALIFAX, ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, LONDON, WINNIPEG, REGINA, SASKATOON, EDMONTON. CALGARY, VANCOUVER

Our Guarantee Has No Time Or Mileage Limits

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 TORONTO, JULY, 1921 Number 7

Saskatchewan Dealers in Convention

Implement and Automotive Trade Sections of Saskatchewan R. M. A. Discuss Important Points—Margins, Tractor Discounts, Implement Act, Dealer's Contracts, Mechanics' Lien Act and Tire Situation Thoroughly Reviewed.

THE eighth annual convention of the Saskatchewan Provincial Branch of the Retail Merchants' Association of Canada was held June 14, 15, 16, in the Byers-Butler Hall, Saskatoon.

S. D. McMicken, Provincial President, was in the chair. The delegates of the morning session, June 14, exceeded in numbers any convention record to date, and they continued to roll in all day from the furthermost corners of the great Province of Saskatchewan. Many more arrived for the trade section meetings which occupied the whole of Wednesday, June 15th.

The Mayor's Welcome.

His Worship the Mayor of Saskatoon, Dr. A. MacG. Young, tendered a hearty welcome to the visitors, which was further amplified by Harley Henry, president of the Saskatoon Chamber of Commerce.

In his address of welcome, Mayor Young showed a remarkable degree of familiarity with merchandising. He made an expert analysis of past and present market conditions, mentioning that the merchants were not alone when they faced a "buyer's" market, as the municipalities found they were in the identical position when they stepped out to sell their debentures.

"Considering the troublous time we have been through," said his worship, "Saskatchewan municipalities have made a surprisingly good showing, although in two or three instances municipalities had defaulted in their bonds. This merely should give a lesson to all merchants, many of whom are also municipal officers, to play the safe game in municipal finance as they did in their own business. And I urge you," said the Mayor, "to accept such municipal office as the electors will give you. You owe a duty to the country to accept the highest responsibility of citizenship."

Mr. Henry mentioned that in Saskatchewan almost 100 per cent. of the merchants had managed to weather the storm, and by the look of the crops, there would be smooth water ahead for them. "The watch and wait policy has been played now as far as it pays to do it. The new watchword for you merchants and for us all is to 'go get 'em'."

Implement and Automotive Section.

The Implement and Automotive trade section met on Wednesday, June 15, both sections being well attended by dealers from all over the province.

Implement Section

The meeting was opened by the secretary at 9.30 a.m., and on the motion of F. Biehn, of Guernsey, seconded by C. E. Conlin of Rosetown, C. W. Wilson took the chair.

The secretary then presented his report of the work done since the previous convention.

The first item on the agenda sheet was the matter of present day margins and after considerable discussion in which all present took part, the following resolution was passed, supporting the resolution passed at the last convention, which had been forwarded to all implement manufacturers, branch houses and jobbers:

"WHEREAS, the margins to the retailer are fixed by the retail lists issued by the manufacturers and jobbers, and

"WHEREAS, these margins are not adequate to enable the retailer to give the service which the public demands and which is highly desirable, and

"WHEREAS certain manufacturers and jobbers have recognized the dealers' contentions and position, as shown by the slight increase in margins allowed this year, and while this is appreciated by the retail implement trade, we, the retail implement dealers of Saskatchewan, organized as a trade section of the Retail Merchants' Association in convention assembled this 15th day of June, 1921, strongly urge the said manufacturers and jobbers to consider thoroughly and without discrimination, the contents of the resolution passed by us in convention last year and in their conclusions be guided by a spirit of fairness to the purveyors of their products."

DEALER'S CONTRACTS

In regard to which the following resolution was passed at the convention:

"In the opinion of this meeting, the various implement manufacturers and jobbers should provide a wholesale as well as a consignment contract, and there should be at least a differential of five per cent between cash net price to the dealer in favor of the wholesale contract."

Statistics were presented by the secretary showing that margins had been increased from 1½ to 2½%, and he stated that a further increase was expected when next season's contracts were got out.

Tractor Cash Discounts.

The matter of cash discounts on tractors was up for discussion and it was decided to have the secretary write the various companies asking what difference in price was made, where dealer bought outright and did his own service work, as it was brought out that a majority of the companies made no difference. Where the dealer was shipped on consignment basis and afterwards sold for cash, he obtained just as much as the dealer who bought outright in the first place and asked no service help from the companies.

The companies were severely criticized by the meeting, as their policy was not in conformity with good business ethics on their own behalf, there being no doubt but what it would be in their best interests to be relieved of all obligations as in the case where the dealer purchases outright, in which case the manufacturers' or jobbers' overhead is considerably lessened and collection expense done away with.

The next matter receiving attention was the action of one company in reducing the dealers' margin on wagons. The secretary read the correspondence which had already taken place and after considerable discussion the matter was left in the hands of the secretary.

Farm Implement Act.

The meeting then gave attention to the Farm Implement Act and its relationship to the contracts which dealers were asked to sign. The secretary read letters received recently from Premier Martin which went to prove the dealers' previous contentions that where they purchased goods outright from the manufacturer or jobbers, they became the vendors under the Act.

The meeting was unanimously of the opinion that the dealers could not give or at least live up to the obligations placed on them by the Act, when they purchased goods outright. The resolution passed at the last convention was read to the meeting, which prayed for the enactment of a "Uniform Contract," which would make it necessary that the manufacturer or jobber give them the same guarantees and warranties as they are required to give to the purchaser.

A very live discussion ensued and the following resolution finally passed:

"WHEREAS, the Farm Implement Act makes it obligatory that the retail implement dealer who purchases farm machinery outright from any manufacturer or jobber, give certain guarantees and warranties when retailing to the purchaser, and

"WHEREAS such warranties and guarantees are given by such manufacturers and jobbers to the purchaser, where the dealer does not purchase their goods outright, but handles them on a consignment contract, and

"WHEREAS, such dealers are not given such warranties and guarantees by the said manufacturer or jobber except as above stated, and

"WHEREAS, in the words of Premier Martin, 'The only protection a retailer can obtain is a contract binding the manufacturer or jobber to keep the re-

pairs at a stated place in Saskatchewan in order to enable the retailer to fulfil his warranty,' and

"WHEREAS, the said manufacturer or jobber has not and will not incorporate such a clause in the contract presented to the retailer for his signature:

"BE IT THEREFORE RESOLVED: That we, the retail implement dealers of Saskatchewan, organized as a trade section of the Retail Merchants' Association, in convention assembled at Saskatoon, this 15th day of June, 1921, strongly support our previous resolution praying for the enactment of a 'uniform contract' as between manufacturer or jobber and retailer, and submit that inasmuch as the Government were able to impose certain obligations on the retailer, which obligations are impossible for him to live up to, the Farm Implement Act be amended as prayed for in the resolution above referred to."

The meeting then adjourned to meet again at 10 a.m. the next day.

Dealers' Contracts

Thursday, 10 a.m., June 16th, 1921. The first item for consideration was the present day contracts. The dealers all being familiar with these, all present took part in the discussion which lasted for over an hour. The discussion produced the following motion:

"RESOLVED—That in the opinion of this meeting, the various implement manufacturers and jobbers, should provide a wholesale as well as a consignment contract and there should be at least a differential of 5 per cent. between cash net price to the dealer in favor of the wholesale contract."

In bringing up the next matter the secretary read letters received from the wholesale implement companies in Regina dealing with the clause in the contracts which allows them to charge back what they consider unacceptable notes any time within six months from the date of the annual adjustment. The dealers voiced strenuous objections to this clause in its present status as they have an indirect liability hanging over them for fifteen months in some cases. The dealers were of the opinion that the clause as contained in the John Deere Plow Company's contract allowing for the return of the notes within six months from the date they are received allowed ample time to examine anyone's credit, in fact three months was plenty. The secretary was instructed to write the various companies pointing out the difference in the contracts and to request that the dealers be advised immediately a note is accepted, and the meeting ordered the matter to be placed on the agenda sheet of the next annual convention, when the secretary was to report progress.

Gratis repairs was the next item and it was the opinion of the meeting that the blockman should be allowed to pass on the broken parts as he was the only one who could determine what were legitimate free repairs, as these were governed by the territory in a good many cases. The secretary was accordingly instructed to take the matter up and report at the next meeting.

Blanket insurance then received the attention of the delegates. Their opinion was that where the goods were stored outside and a depreciation charge paid, the dealer should not be required to take out insurance on such goods, as there was no fire risk. In any case the goods were the property of the company and the charges should be carried by them the same as they did several years ago. The secretary was instructed to write the companies asking for information as to how insurance would be handled, where the dealer had paid insurance on $5,000 and at the time of fire loss only owed the Company $2,500.

This concluded the business and the meeting then adjourned after expressing appreciation of the work carried on since last convention and on the increase of membership.

A. J. Humphries, of Raymore, Sask., was appointed provisional chairman until the next annual convention of the trade section, which will take place next January, 1922, in the place of G. W. Matheson, who is now out of business.

AUTOMOTIVE SECTION

The meeting was well attended by automobile dealers from all sections of Saskatchewan and was opened by the secretary, H. T. Pizzey. On motion of Mr. Gillespie, of Melfort, seconded by J. W. Funk, of Herbert, J. W. Sanderson, of Prince Albert, took the chair.

The first business was the appointing of a resolution committee, and W. J. Ward, of Saskatoon, J. W. Funk and T. H. Masterson of Regina, were appointed.

The agenda sheet first provided for a further discussion regarding the excise tax paid on automobiles when the tax was abolished on December 20th, 1920.

The secretary outlined the action taken at the annual convention of the Automotive Trade Section held in Regina on January 26th and 27th, and reported the further activities of the association to effect a rebate since that time.

A long debate ensued during which the various manufacturers were severely criticized and condemned for their action in not living up to the agreement made with the committee representing the dealers and the government at the time of the joint meeting with the Finance Minister.

The various delegates speaking all expressed the idea, that the manufacturers will lose more by their unprecedented action as above, than if they had reimbursed the dealers from their own funds and without making a "pool."

At the present time the western dealer will not buy in anything like the quantities previously and this will result in a certain amount of stagnation in the trade reflecting itself on the manufacturers.

At the conclusion of the discussion which lasted upwards of two hours, the meeting expressed confidence in the Association in dealing with this matter on motion of C. E. Conlin of Rosetown and Lieth

The secretary read a letter from the Dominion secretary, Mr. Trowern, asking for information as to how many dealers had taken advantage of the 50 per cent. offer made by the manufacturers and to what extent, and told the meeting that a circular letter was already in the course of preparation which would yield the necessary statistics if filled in and returned by the dealers. This questionnaire asks dealers to state the total amount of tax lost, amount rebated, number of cars on hand December 20th, 1920, make and model. The secretary further stated the Dominion office still has the matter in hand and further developments are expected at any time. There was no doubt as to the feeling of the delegates and considerable bitterness was shown principally because the tax was a manufacturers tax and the dealer should have been protected at least.

Mechanics' Lien Act

The Mechanics' Lien Act next received attention. The secretary explained to the meeting what certain members had requested of the provincial office, i.e., that a document be drawn up preserving the lien on a repaired car after it had left the repairman's possession on a verbal promise to pay the bill at a later date. At the annual convention in January the matter was left in the hands of the provincial office and the secretary read a report setting out the committee's findings in the matter.. The report is as follows:

Your committee having gone at considerable length into the matter of having a document drawn up which would preserve the mechanics' lien even though the repaired car left the possession of the repairman, wish to submit the following report:

The association solicitors advise us that it would not be possible under the present status of the Act to draw up such a document which would be binding against a third party, thereby making it necessary that we ask amending legislation to attain the end desired.

Your committee found that if such a change was effected, it would be very detrimental to the sale of new cars on a deferred payment basis, and as a goodly number of garage men deal in automobiles, it was thought that any good derived from the change would not counter-balance the obstacles added to other than cash sales of new and used cars.

Such changes would place the dealer in a very awkward position, for not only would the business of trading in used cars be made more shaky, but in the event of being forced to repossess a car sold on account of non-payment, prior liens for repair work and parts would, in the great majority of cases, place the original vendor in the position that he could not afford to take them up and consequently he would be forced to lose his equity in such cars.

Again where a car was sold on the deferred payment basis, it could never be definitely ascertained what liens were existing as work might have been done at a dozen different garages, and not paid for. This would particularly apply where cheap used cars were sold on terms of half cash or less, and had since had an expensive overhaul at some other establishment.

In any case the repairman at the present time is fairly well protected, for he obtains a prior lien on the car provided that he retains possession of it for three months after the work is completed and the account remains unsettled. By complying with the provisions of the Act as to advertising, the car may be auctioned and the bill satisfied from the proceeds.

Your committee also consider that a garageman should and can carry on his business on a cash basis, thereby coming to the conclusion that the association should take no action on the matter. Respectfully submitted.

Used Car Situation

The next item for consideration was the "used car situation." This subject had received the attention of the committee since the convention in January last and the schedule agreed upon as maximum allowances for used cars was adopted by the trade section on motion of F. J. Clark, Luseland, and C. W. Wilson. Central Butte, and the secretary authorized to send out a circular letter apprising the trade as to the schedule and its use.

Louis Chevrolet, the well-known speed king, at the wheel of a Frontenac racing car, testing it, prior to Milton winning the 500-mile Indianapolis Speedway Classic with it on May 30. Mr. Chevrolet is vice-president and chief engineer of the Munroe Automobiles Ltd., which is producing a car of similar mechanical features to the Frontenac racer models.

The schedule is as follows:

Up to One year .... 30% depreciation
Up to Two years .... 40% depreciation
Up to Three years ... 50% depreciation
Up to Four years ... 60% depreciation

The above figures to be the maximum allowances and on the present market value of the car if new. From the above allowance must be deducted a sum sufficient to cover the cost of putting it into shape for resale and the approximate overhead in handling.

Example:

Chevrolet 490, three years old—	
New car retails at	**$1000.00**
Depreciation	**500.00**
	$500.00
Repairs to put it in selling shape	**50.00**
	$450.00
Selling commission	**50.00**
Allowance to customer	**$400.00**

Tire Situation

The tire situation was next on the programme and a long discussion ensued. The meeting fully supported the resolution passed by the B.C. Automotive Section and decided to leave the matter in the hands of the Ontario Automotive Section who are at present engaged in interviewing the various tire manufacturers. Moved by Gillespie-Masterson:

"That we heartily endorse the resolution passed by the B.C. Automotive Section and lend our energies and support to it in every possible way."

Resolution passed by the Automotive Section of the Retail Merchants' Association of Canada, Incorporated, at a meeting held in the office of the R. M. A., May 19th, 1921.

TIRE SITUATION

The following resolution was passed by the Automotive Trade Section:

"This Automotive Section of the R. M. A. hereby go on record as emphatically protesting against the motion of Canadian tire manufacturers in arbitrarily reducing the retail dealer's margin of profit. In view of the fact that this action practically means forcing the dealer to do business without profit, it is further resolved that the Canadian manufacturers be immediately requested to restore the dealer's margin of profit to not less than 20 per cent off consumers' list price."

"WHEREAS the cost of conducting a retail tire service establishment is estimated by competent authorities to be from 15 to 20 per cent, and

"WHEREAS a reduction in the selling price of tires has been made effective May 16th, 1921, averaging approximately 15 per cent. on all sizes and qualities, thus compelling the tire dealer to render service at cost or even less. this Automotive Section of the B.C. Board of the R. M. A. of Canada

"HEREBY GO ON RECORD as emphatically protesting against the motion of Canadian tire manufacturers in arbitrarily reducing the retail dealer's margin of profit."

In view of the fact, as set out in the preceding paragraph, that this action practically means forcing the retail dealer to do business without remuneration,

"IT IS FURTHER RESOLVED that the Canadian tire manufacturers be immediately requested to restore the dealer's margin of profit to not less than 20 per cent. off consumers' list price, and

"IT IS HEREBY ORDERED that a copy of this resolution be immediately forwarded to every provincial branch of the R. M. A. throughout Canada, to the Dominion secretary at Ottawa, and to the Canadian tire manufacturers, through their B.C. representatives."

The secretary was instructed to endeavor to arrange a meeting between committees representing the tire dealers of the four prairie provinces and representatives of the tire manufacturers to take place as soon as possible.

As the hour was getting late the meeting adjourned, and the balance of the subjects for discussion and action were tabled.

The second annual convention of the Automotive Trade Section takes place in Moose Jaw on January 25th and 26th, 1922.

Officers for the year are: W. J. Ward, Saskatoon, chairman: T. H. Masterson, Regina, first vice-chairman; C. Alexander, Moose Jaw, second vice-chairman; J. F. Funk, Herbert, honorary-treasurer; M. B. Appleton, Yorkton, honorary-secretary.

Creating the Market for Farm Tractors

By H. G. WEAVER

In Hyatt's "Tractor Tract."

THE neighbor's plowing looks better than your own when you see it from a distance. The other fellow's job appears pretty soft until you swap places with him.

Marketing tractors requires real salesmanship, but it's easy to call to mind things that must have been more difficult to sell.

I guess the chap who sold the first cash register had a pretty tough job on his hands.

People had successfully engaged in the grocery and drug business a good many years before John Patterson was born and they had found it possible to buy stuff, sell stuff, spend the proceeds and repeat the process without any special assistance from Dayton, Ohio.

I don't know what kind of tactics the first cash register salesman employed. I imagine he had a smooth line of gab about automatic spring releases, digit wheels, counter ratchets, etc.

And then some bird came along who was short on mechanics but long on human nature. He studied the thing through the customer's eyes. He found just how a cash register would dovetail into a man's own business—how it would bring greater efficiency and increased profits.

If the potential buyer operated a department store he was shown how vital and how easy it was to maintain a detailed record of each transaction. If he conducted a pawn shop the need of a cash register was proved to be equally urgent.

Or if perchance it were the proprietor of an ice cream emporium—how helpful it would be to refer to a simple ticker tape and see where Susie Smith, two weeks ago last Friday, purchased three fingers of chocolate parfait for which she paid the sum of ten cents—plus War Tax!

A cash register is the panacea for all the storekeepers' ills. Maybe the merchant didn't use to need 'em, but they need 'em to-day. They need 'em because they've been taught to need 'em!

The cash register has ushered in a modern and more efficient system of store keeping.

An intelligent merchant would no more think of going into business without a cash register than a practical agriculturist would attempt to dry farm the Florida Everglades!

The cash register is a National institution and personally I can't blame any man for wanting to hear a bell ring when the customer kicks in with a dime!

I don't know much about cash registers. They are better looking than farm tractors but, in the beginning, I doubt if they were as badly needed.

What do you think about it?

And when adding machines were first introduced the market was limited to a few banks, factories and large wholesale houses. An analysis of the field showed that few commercial institutions had enough figures to add to keep such a machine busy for more than a few hours a day.

An adding machine didn't fit into the average business—therefore the average business had to be made to fit the adding machines.

The need didn't exist—it had to be created! Or rather, let me say, it wasn't supposed to exist—it had to be uncovered.

Propaganda was immediately launched. It was constructive educational propaganda designed to influence even the smaller retail houses to inaugurate scientific bookkeeping, cost systems, perpetual inventories, etc.—because all these things meant more accounting and more accounting meant more adding and more adding meant more adding machines.

You don't need a blue print to follow this line of reasoning. It applies to printing presses, locomotives, steamboats, telephones, automobiles, motortrucks, farm tractors and roller bearings.

And while I think of it:

"A peptomist is the chap who sees something away out yonder that isn't known to exist and goes out and gets it and brings it back!"

A Peptomist is a man of vision.

A Peptomist is a Creator!

In the light of past commercial achievements I'd like to know what's going to keep power farming from coming into its own?

Sometimes a market exists—sometimes it has to be created. The fact that farms are too small or too large, hilly or rocky, hot or cold, rich or poor, wet or dry will never stop the sale of tractors.

Power farming has come to stay even though it may be necessary to move a few fences, haul a few rocks, dynamite a little landscape, or explode a few traditions.

It's hard work to introduce tractors—it's hard work to introduce anything except a fad.

By the way, I wonder who created the need for the Ouija Board?

Tractor Has Ushered in New Era

THE tractor has ushered in a new system of farming. Even aside from its unlimited adaptability for belt work, it brings advantages that nothing else can provide. It means better soil preparation, extra acreage, soil conservation through deeper plowing, bigger yields per man and with less effort, insurance against adverse weather conditions and the most important final advantage of greater profits to the farmer himself.

Power farming means increased efficiency. The advent of the tractor marks an epoch in the evolution of agriculture. The word "evolution" means development, growth and progress. Throughout the civilized world, and particularly in America, human activities, methods and processes are moving steadily forward in the direction of greater efficiency.

Denying the fact does not change it. In agriculture as well as industry the advocates of the old methods must ultimately recognize the new.

Progress is the order of the day.

As Glen Buck has said:

"Howl, howl, ye bloomin' Sons of Joshua, who would have the World stand still. Cry and beat your fingers against the Juggernauts of Progress—then, exhausted, stand and watch the World go by!

"Before the thing that became man first took form out of the ooze, Plan Was!—and the heart of that plan was Progress!

"The tadpole could not stop it, the monkey could not halt it, Kings and Prophets could not thwart it—Nor Can Ye!

"Save your bruised fists to rub your bewildered eyes and behold!—The World Moves On!"

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TRADE JOURNAL

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Manufacturers Take Note.

MUCH has been written this year, in trade papers, newspapers, etc., about the dealer and "the situation."

The dealer has been advised to be optimistic. He has been urged to go out into the highways and byways, and to keep his nose to the trail to catch the faintest scent of business. It has been pointed out to him that it is suicidal to refrain from advertising.

Reams of paper and tons of ink have been used to convince him that he must be up and doing, must "keep on his toes," and above all, must never be guilty of hiding his light under a bushel.

That is all good and perfectly in order. In fact M.T.I. has also been doing its best to help the dealer in a difficult situation, with, we believe, some success.

But while we have been so busy about the dealer we have almost forgotten the manufacturer.

If ever there was a time when manufacturers should advertise, it is now. When business is booming and sales come easily manufacturers generally advertise extensively. But now that business is weak and sales are reduced to a shadow one would suppose that the manufacturers would strain every point to keep their products before their prospects.

Unfortunately that is not so. Immediately when the first sign of a slump in business became apparent they began to curtail. This curtailment has gradually reached the point when some manufacturers have practically ceased advertising.

This is not an advertising promotion letter. It is not part of an editor's duties to promote advertising But it is the editor's duty to draw attention to glaring inconsistencies, whether on the part of the dealer or the manufacturer.

How can a manufacturer expect a dealer to go out to sell a product which he, the manufacturer, has ceased to advertise?

How can a dealer tell the story of a great tractor when the manufacturer has withdrawn his support?

How can a prospect be induced to buy a machine from a dealer who is shaky, or not sure, because he has lost his backing?

How can the vision of power farming be materialized if the story of the great idea be not continually recited?

Can it be expected that the farmer will come to the dealer to hear the story? Will the dealer keep telling the story without a prompter? Is it possible without advertising to put a threshing machine on a Canadian farm?

There is only one answer to all of these questions—**it cannot be done!**

A man who fails to come up after a blow is "licked." The manufacturer who "lies down on the job" just now tacitly admits defeat. Because a thing is difficult is no reason for thinking it cannot be done. If sales are slow in coming it is no indication that advertising has failed or that the story is not being told and not being heard.

The manufacturers who support their dealers will find that sales will be kept at a fair level. With conditions in the automobile and farm machinery industries as they are it is no time to tamper with dealer confidence. By maintaining good snappy advertising the manufacturers will ensure for themselves the loyal support and confidence of their dealers without which the automotive and implement industries could not exist.

TURN YOUR IDEAS INTO CASH

In order to encourage the exchanging of ideas among its readers, and to stimulate interest in better sales and business management, M. T. I. has decided to establish a new department.

M. T. I. will select the subject to be discussed, and in order to give ample time for every reader to compete, each subject will be given two months ahead. For instance the subject announced this month will be for the September issue.

For the best idea on a given subject, we will pay $2 and for every other item published we will pay $1 each. Unused articles will not be returned.

The subjects will deal with advertising, sales promotion, system sales letters, service, etc., etc.

We also want our readers to suggest subjects for discussion. If there is any problem puzzling you just put it on paper and send it along for discussion.

The subject chosen for the first contest is: "HOW BEST TO FIND LIVE PROSPECTS."

Articles should not exceed three hundred words. Write plainly on one side of the paper, in simple language. Put it in any shape; we will fix it up for you. Be sure to give your name and complete address. Mail articles to Editor M. T. I., 143 University Avenue, Toronto, Ontario.

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The Tire Situation

TIRE dealers throughout the country are up in arms at the recent action of the Canadian tire manufacturers in reducing the retail profit on the sale of tires from 20 to 15 per cent. The dealers contend that such a curtailment of profit is barely sufficient to cover the cost of doing business. It is further protested that this action practically means forcing the dealer to operate without remuneration.

On the other hand the manufacturers claim that their action is the result of a careful investigation and is a sincere attempt to bring order out of chaos.

These investigations the manufacturers state, revealed the fact that price cutting was being practised to an alarming degree. Numbers of men, who had no idea of building up a real business, attracted by a good margin and a quick turnover, entered the tire retail business purely as a speculation. They had some capital and bought up large stocks of tires and sold at cut-rate prices. They were content with a dollar or so profit hoping to make out on a large turnover. Needless to say they provided no service and were in the business but a short time.

In addition to this type of dealer there is the dealer who is in the business to stay, who also cuts tire prices. In fact for a long time there has been a veritable price cutting war on. This war had assumed such serious proportions that the dealer who insisted on selling at the list price had his sales cut down to a point where he considered it was hardly worth while carrying on. It was in order to protect this dealer the manufacturers state, that they reduced the profits from 20 to 15 per cent, arguing that the lower margin would tend to keep out the speculator and would make it virtually impossible to cut prices. The legitimate dealer would get a larger share of the business and would in the long run, perhaps, make more than he would with the larger profit in the face of price cutting competition. It is a good argument but is it dealing fairly with the "full price" dealers, who, we are glad to say, are in the majority.?

As pointed out, by the Saskatchewan automotive dealers at the convention held in Saskatoon recently, and reported in this issue of Canadian Motor Tractor and Implement Trade Journal, the new scale is too low and practically compels the dealer to operate without profit.

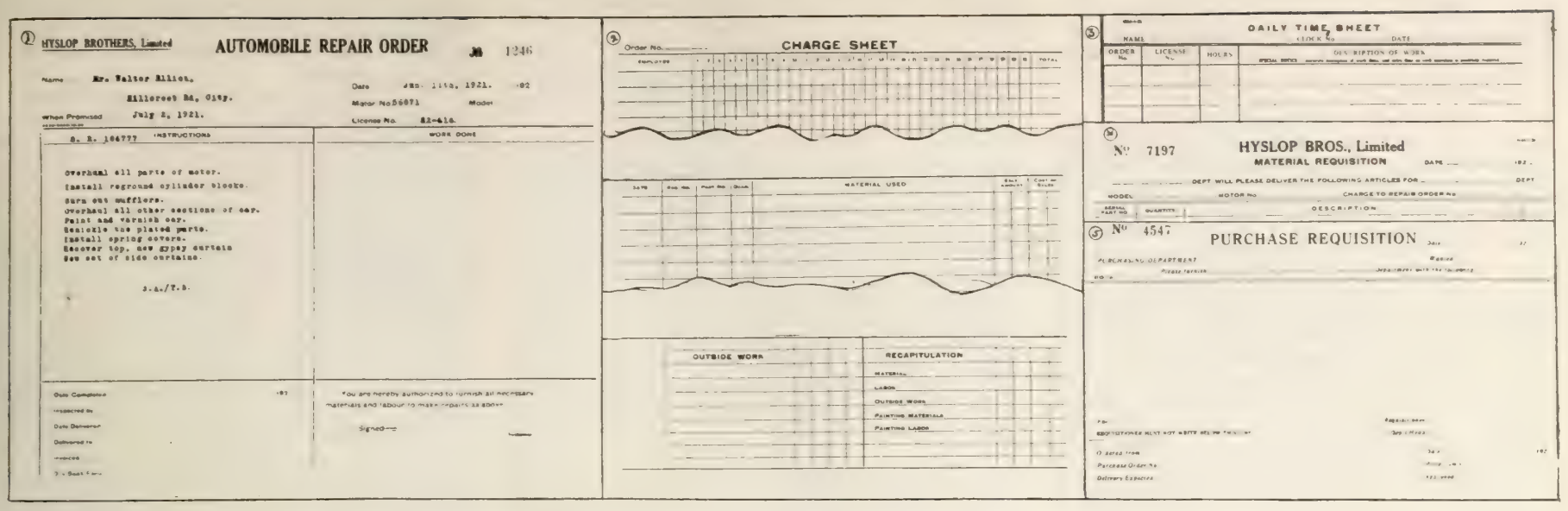
Tire retailing is in a bad plight at present. Dealers who try to maintain prices are having a hard time. They are in open combat with mail order houses, the five car contract system, and price cutters.

We believe the manufacturers could do a lot to help the situation by refusing to supply tires to any man or concern, who practised price cutting. It is a difficult thing, we know, to put such a policy into successful operation but it does not require the wisdom of Solomon to realize that much more could be done than has yet been attempted, and that reducing the dealer's profit to a dangerous margin is a precarious method to adopt to achieve the much needed clean up.

Outlook of the Automotive Industry

DISCUSSING the outlook for the automotive industry, Messrs. Hayden, Stone and Company, of New York City, said recently:

"While it is proved that the recent price reductions have been made to meet competition, it is equally true that this should have the effect of bringing the price of cars down to the reduced buying power of the country, which has naturally decreased very sharply during the last six to nine months. The industry has plainly entered the competitive area for the first time in its last three years. It is going to be a struggle to get business, and the race is likely to go to the strongest. During the abnormal demand of 1919 and 1920 the automobile producing capacity of the country was vastly expanded both by additions to plant by old companies and through formation of many new companies. Some of these new companies are making their bow to the buying public at a time when competition may go to the length of forcing weak or high cost companies to do business at a loss. In fact, broadly speaking, the May price cuts have probably eliminated the great bulk of profit which was still left in the industry.



HYSLOP BROTHERS, Limited — AUTOMOBILE REPAIR ORDER — No. 1246

Name Mr. Walter Elliot. Date Jan. 11th, 1921. 402
Hillcrest Rd., City. Motor No. 56071 Model
When Promised July 2, 1921. License No. 82-416.

S. S. 164777 INSTRUCTIONS — WORK DONE

Overhaul all parts of motor.
Install reground cylinder blocks.
Burn out mufflers.
Overhaul all other sections of car.
Paint and varnish car.
Renickle and plate parts.
Install spring covers.
Recover top, new gypsy curtain
New set of side curtains.

J. A./T. B.

Date Completed ... 192
Inspected by
Date Delivered
Delivered to
Invoice
No. Sheet Form

You are hereby authorized to furnish all necessary materials and labour to make repairs as above

Signed

CHARGE SHEET

Order No. ... Employee ... 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 M T W T F S S M T W T F S S TOTAL

MATERIAL USED

Date | Order No. | Part No. | Quan. | Description | Unit Amount | Cost or Sales

OUTSIDE WORK

RECAPITULATION
Material
Labor
Outside Work
Painting Materials
Painting Labor

DAILY TIME SHEET

NAME ... CLOCK No. ... DATE ...

ORDER No. | LICENSE No. | HOURS | DESCRIPTION OF WORK (SPECIAL NOTICE: Accurate description of work done, and note time as well as number of employees)

No. 7197 — HYSLOP BROS., Limited — MATERIAL REQUISITION — DATE ... 192

DEPT. WILL PLEASE DELIVER THE FOLLOWING ARTICLES FOR ... DEPT.

MODEL ... MOTOR No. ... CHARGE TO REPAIR ORDER No.

SERIAL PART No. | QUANTITY | DESCRIPTION

No. 4547 — PURCHASE REQUISITION — Date ... 192

PURCHASING DEPARTMENT — Please furnish — Requisition No.

REQUISITIONER MUST NOT WRITE BELOW THIS LINE — Buy (Firm)

Ordered from — Date ... 192
Purchase Order No. — Ship (Firm)
Delivery Expected — Via

These forms, which are described in the following article, are sufficient to take care of any repair business.

System in the Automobile Repair Shop

By ELTON JOHNSON

So many enquiries have been received as a result of recent articles in M.T.I. regarding the necessity of keeping proper business records in a garage, that it was thought a practical illustration, showing actual forms and records in use by a successful organization, would be of value. Although these are the forms used by a large city garage, yet the essential principles contained in them can be utilized safely by garagemen who operate much smaller businesses in country towns and districts.—The Editor.

After years of experimentation, the executives of Hyslop Brothers, Limited, Toronto, have evolved a system of record keeping in their automobile repair department which is giving the greatest satisfaction. For their own particular business, they believe that their present system of keeping track of their repair jobs is almost perfect.

The feature of the system in vogue at Hyslop Brothers is its simplicity. Thoroughness, however, is demanded of any system and in this case every possible transaction is listed on proper forms. The record forms in use here are invaluable in arriving at adequate fair charges, in keeping track of the mechanics, and in having a comprehensive permanent record of the progress of the repair shop business.

Hyslop Brothers, Limited, do not give in all cases a fixed charge when a car is brought in for repair. In certain operations they have found it possible to tell definitely the cost of replacing certain worn out or broken parts without definitely fixing the labor cost. In other cases, especially in overhauling parts of the automobile, they have prepared data from which they can give a definite charge for the labor items without specifying the cost of parts or material which may or may not be needed in the course of overhauling.

Labor Form.

This data has been put into a permanent labor form of which the illustration on this page is a copy. As the data applies only to Cadillac cars, and as overhead and labor costs vary in each district and each garage, the cost of the different operations has been omitted. The arrangement of the various operations into classes will be helpful to all our readers, and with a little study and observation any repairman can fix his charges to suit conditions prevailing in his garage.

The most important forms used are the "Automobile Repair Order," the "Material Requisition," the "Purchase Requisition," the "Daily Time Sheet," and the Invoice. A reproduction of each of these forms, with a description of the method in which they are used, will explain the principles upon which this Toronto firm has built up a successful repair department.

No. 1—Repair Order Sheet.

When a car is brought in for repairs, a memo of the repairs to be done is made by the clerk at the receiving station on the ground floor. The car is then taken in an elevator to an upper floor. From the instructions on the memo, an official record is placed on the Automobile Repair Order Sheet.

This sheet contains full particulars of the work to be done and gives the date "promised," the date "completed," and the date "delivered." Carbon paper is used to make two copies exactly similar to the

LABOR NECESSARY TO OVERHAUL CADILLAC CHASSIS, consisting of the following work: (Quotations cover labor only and do not include material or parts that may be required).

MOTOR—Disconnecting and taking off all wires, conduits and fittings, removing cylinder blocks and cleaning carbon out of same, cleaning carbon off pistons, cleaning out crank case, grinding valves, taking up and fitting connecting rod and crank shaft bushings and bearings, removing and cleaning radiator, removing, cleaning and adjusting carburetor, replacing radiator, cylinders, conduits, wiring and all other attachments, adjusting and testing .....

ELECTRICAL SYSTEM—"GENERATOR." Taking out of car, taking apart, cleaning, turning armature, checking up connections and brushes, reassembling, adjusting and installing .....

"IGNITION." Checking up, cleaning and adjusting contact points in distributor, cleaning spark plugs and adjusting same .....

Checking up wires and connections, tracing short circuits and other adjustments or repairs will be charged for on a labor and material basis .....

"BATTERY." Recharging .....

Repairs to battery will be charged for on a labor and material basis.

ADJUSTING VALVES—Adjusting valves in Type 51 models .....

Adjusting valves in Type 53 and later models .....

Adjusting and grinding valves in Type 51 and later models .....

TIMING CHAINS—Fitting new chains .....

CARBON—Burning out carbon .....

BEARINGS—Reseating all bearings .....

STEERING—Adjusting gear and worm; adjusting connecting and parallel rods .....

CLUTCH—Taking out, cleaning, adjusting and replacing same .....

UNIVERSAL JOINTS—Taking apart, cleaning, adjusting and replacing same .....

TRANSMISSION—Taking out all gears and bearings, examining carefully, cleaning, refitting and adjusting same, including rods and levers .....

MUFFLERS—Taking off, cleaning and replacing:

Two mufflers .....

One muffler .....

REAR AXLE AND DIFFERENTIALS—Cleaning and adjusting pinions, gears, bearings, mounting and live axles .....

Taking apart whole system, examining gears, mountings and bearings, reassembling and adjusting .....

BRAKES—Cleaning all grease and foreign material from surface of lining and adjusting connections and rods .....

Relining brakes, (labor only) .....

"NOTE"—Above prices will be charged providing brakes and rods are found in fair condition and not seized. If the latter should be the case, labor charges will be made in accordance with the number of hours required to do the work.

SPRINGS—Opening leaves and inserting oil, five springs .....

Two front springs only .....

Rear suspension only .....

Detaching springs from chassis, taking apart, cleaning and oiling leaves, building up and refitting, five springs .....

Front springs only .....

Rear suspension only .....

WHEELS—Removing front axles, cleaning bearings, refitting and adjusting—per wheel

All four wheels .....

BODY—Removing from chassis and replacing. (If same should be necessitated by work to be performed on certain parts of chassis not accessible otherwise) .....

CHASSIS—Cleaning all throughout, painting the inside of frame .....

"NOTE"—Repairs to radiator, fenders, windshield, body, cushions, upholstery, top, curtains, and other parts that may be damaged or worn can be made on our premises, and will be charged for in accordance with labor, material and parts furnished. New parts to be supplied and charged extra as may be required.

original. The first sheet is signed by the customer and filed in the general offices; the second is filed in the repair shop, while the third, which is cardboard, is attached to a frame which hangs on the radiator of the car under repair.

Form No. 2.—Charge Sheet.

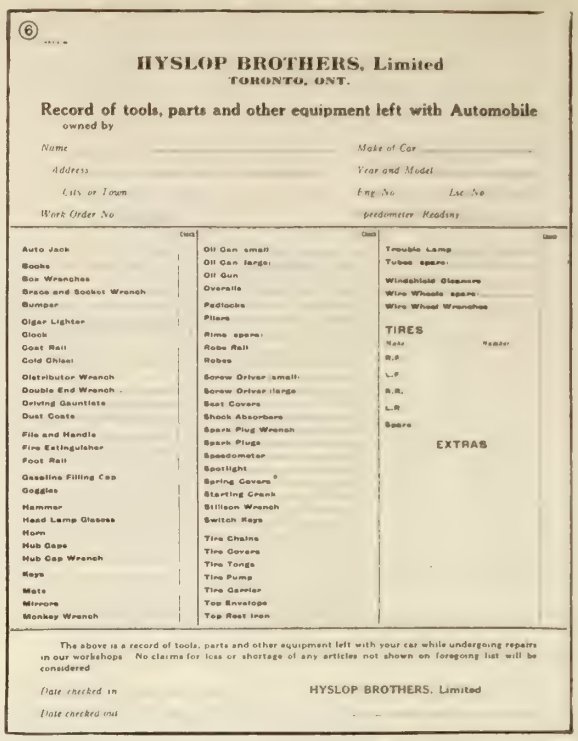
On the back of the copy of the Automobile Repair Order which is filed in the repair shop, is a form known as the Charge Sheet. This designates by hours the amount of time spent on that particular repair. The number of parts and the value of the material used during the repair process is listed. A feature is the recording of the cost of all work which is done outside the shop, such as nickelling. A recapitulation sums up the cost and gives total charges. From this sheet, the invoice is made up.

Form No. 3.—Daily Time Sheet.

The foreman of the shop is responsible for seeing that each mechanic makes out an accurate detailed account of the time spent on each individual car. This time is entered up on the Daily Time Sheet. From this sheet, the time cost is adduced and entered on the charge sheet. A feature is the compulsory description of the nature of the work done. This sheet goes to the repair shop superintendent and is used in fixing charges.

Form No. 4.—Material Requisition Sheet.

Whenever a spare part is needed in the repairing of a car, the mechanic makes out a Requisition, entered on a Material Requisition Sheet. This form must be signed by the foreman. It is then taken to the stock room clerk who hands over the required material. The original is placed on file in the stock room while the copy goes back to the repair shop where it is used in making out the charge sheet and finally the invoice.



⑥ .....

HYSLOP BROTHERS, Limited
TORONTO, ONT.

Record of tools, parts and other equipment left with Automobile
owned by

Name ..... Make of Car .....
Address ..... Year and Model .....
City or Town ..... Eng. No. ..... Lic. No. .....
Work Order No ..... Speedometer Reading .....

Check		Check		Check	
Auto Jack		Oil Can small		Trouble Lamp	
Books		Oil Can large		Tubes spare	
Box Wrenches		Oil Gun		Windshield Cleaners	
Brace and Socket Wrench		Overalls		Wire Wheels spare	
Bumper		Padlocks		Wire Wheel Wrenches	
Cigar Lighter		Pliers		TIRES	
Clock		Rims spare		Make	Number
Coat Rail		Robe Rail		R.F.	
Cold Chisel		Robes		L.F.	
Distributor Wrench		Screw Driver small		R.R.	
Double End Wrench		Screw Driver large		L.R.	
Driving Gauntlets		Seat Covers		Spare	
Dust Coats		Shock Absorbers			
File and Handle		Spark Plug Wrench		EXTRAS	
Fire Extinguisher		Spark Plugs			
Foot Rail		Speedometer			
Gasoline Filling Cap		Spotlight			
Goggles		Spring Covers			
Hammer		Starting Crank			
Head Lamp Glasses		Stillson Wrench			
Horn		Switch Keys			
Hub Caps		Tire Chains			
Hub Cap Wrench		Tire Covers			
Keys		Tire Tongs			
Mats		Tire Pump			
Mirrors		Tire Gauge			
Monkey Wrench		Top Envelope			
		Top Rest Iron			

The above is a record of tools, parts and other equipment left with your car while undergoing repairs in our workshops. No claims for loss or shortage of any articles not shown on foregoing list will be considered

Date checked in ..... HYSLOP BROTHERS, Limited

Date checked out .....

Form for Checking Customer's Tools

Form No. 5.—Purchase Requisition Sheet.

Whenever there is a lack in the shop of material needed for any particular repair job, the foreman requisitions for the needed material on a Purchase Requisition sheet. The superintendent, if he approves, sends this form, which is made out in duplicate, on to the purchasing department. When certain work on the car has to be done outside the shop in some specialty concern, this fact is also noted on this slip. The information contained on this sheet is transferred to the Charge Sheet, possibly to both the "material used" and "outside work" sections.

The final invoice is made out in duplicate and gives to the customer a detailed account of the time spent on the car, and the number of parts and accessories used in making the repair. The duplicate is kept as a permanent office file.

Form No. 6.—Customers' Tools Sheet.

One form which has proved immensely popular with customers is the form, officially known as 7457-6-19. This is a record of tools, parts and other equipment left with each automobile which is brought in for repair. The record lists all possible tools and parts and each of these that is left in the car is carefully checked and marked with a special check mark. This record is given to the customer and no claims for loss or shortage of any articles not shown on the list will be considered by the firm.

Tractors Necessary in Modern Farming

By ARNOLD P. YERKES

MORE than a decade ago Thomas Edison is credited with making the statement that within ten years a horse would be a curiosity. Seven or eight years ago a large automobile manufacturer was reported to have said that within three years horses would no longer be required for farm work.

Such statements as these, coming from men who are well known and who have the reputation of possessing considerable knowledge, cannot help but create in the minds of the general public who read their remarks the impression that since such men have been mistaken concerning the rapidity with which horses were to be displaced, it probably means horses will continue to be used indefinitely and that automobiles, motor trucks, and tractors are not displacing horses as rapidly, nor to the extent which had been expected.

Absurd Predictions

It is to be regretted that men who are well posted on their own line of business frequently seem to feel capable of expressing an expert opinion on some subject entirely out of their realm. The predictions that horses would disappear within ten years or within three years are absurd on their very face to anyone who stops to give the matter any consideration at all. There are on farms in the United States and Canada somewhere between twenty and thirty millions of horses, and since the natural life of a horse will average somewhat over ten years it is obvious that unless the farmers killed off their young horses, or some disease accomplished the same end, there would be a large percentage of the horses living at any given time, still in existence three years from that date, or even ten, supposing that no more colts were raised, and it is not at all likely that the thousands of men who are engaged in raising horses will entirely stop breeding at a moment's notice.

As opposed to the two predictions referred to, the press has lately printed a great many articles containing statements and inferences to the effect that the displacement of work horses by automobiles, motor trucks, and tractors had about reached its limit and that the horse would henceforth hold his own or even increase in numbers.

These predictions are just as absurd as those already mentioned. The real truth of the matter is between these two extremes. The automobile has practically displaced the horse for pleasure driving and ordinary travel. In many sections a buggy or light horse-vehicle is almost a curiosity on the roads and about the only time horses are used for passenger travel in most sections is in sleighing-time, and this, of course, occurs only in those sections where there is considerable snow.

Automotive Machines Gradually Displacing Horses

So far as city hauling is concerned the motor truck is making extremely rapid progress in displacing horses. This has been especially true during the last three or four years and there is apparently little or no slackening in this process. Of course, during the present business depression trucks are not selling as freely as a few months ago, but neither are horses, and in spite of what some horse enthusiasts say, there is no real tendency whatever toward displacing motor trucks with horses. While there may occasionally be instances where a concern which has used motor trucks for certain purposes has decided that horses can be used to better advantage for these purposes, such instances are decidedly exceptional and are not an indication that the use of trucks will not, on the whole, continue to increase rapidly. These cases are similar to the instances which occurred a few days ago when a few men who had owned automobiles became discouraged with them and went back to horses, only to buy other automobiles a little later on. At that time some people ignored the success of the automobile and saw only its failures, but such an attitude on the part of a few short-sighted individuals did not then and will not now have any material influence on the real tendencies of an industry—motor trucks will continue to improve and their successes have been such that they are certain to be used more and more as time goes on.

As a matter of fact, the displacement of horses in the cities by motor trucks has been so great during the past few years that the manufacturers of harness, horse shoes, horse shoe nails, wagons, and other goods which are used only in connection with horses, together with the men operating horse markets and selling feed and grain, have formed an association for the purpose of delaying the adoption of motor trucks so far as possible. Their means to this end is a campaign of publicity designed to "boost" the horse and to disparage the motor truck, tractor, and automobile in every possible manner.

So far as the farm tractor is concerned it has not displaced horses to the same extent as has the motor truck, since there are some jobs on many farms for which horses can be used to better advantage than tractors, and also partly for the reason that farmers can maintain their work stock at slightly lower cost than can a city concern, and many farmers have kept more horses than they really needed, after the purchase of a tractor, partly as a matter of insurance against having their work delayed in case the tractor should give trouble or break down.

The Tractor is Steadily Becoming a Necessity

Such a practice is only to be expected at first, as the tractor is a new machine to practically all farmers, and inasmuch as most farm work must be carried on during a limited season, and any delays are pretty certain to be expensive, a great many men have figured that they would play safe by keeping

A Battery of 18 Case Tractors used on a 12,000-acre ranch in California. During the year these tractors work from 100 to 150 days profitably.

some extra horses on hand to be used in case trouble was experienced with the tractor. After a season or two of experience with the new power plant, however, during which time the owners became familiar with its care and operation, a great many farmers have reached the conclusion that the tractor is sufficiently reliable to make it unnecessary and unprofitable to keep extra horses, even though they did not require much feed to do the small amount of work they were called upon to do, and hence reduced still further the number of horses kept.

It is open to argument whether the tractor will eventually succeed in displacing horses entirely for farm work in those sections where soil conditions and the type of farming followed are favorable to its use. It has already been demonstrated on a great many farms that some types of farming can be carried on more profitably without any horses whatever than with tractor and horses. With other types of farming there are jobs to be done which seem to justify keeping a few horses, even though the tractor does most of the heavy field work and all of the belt work. In some such cases the use of two or more tractors of different sizes has proved more profitable. In such case the small outfit does the light jobs for which some tractor owners employ horses, while the larger machine does the heavy work.

Many Farmers Not Using Tractor to Best Advantage

It is a well-known fact that many farmers have not taken full advantage of their opportunities to change their systems of farming somewhat in order to utilize the tractor to best advantage, even though such changes would be to their financial interest. There is no doubt but that as time goes on and tractors are used in increasingly greater numbers, the farmers who have not changed their system will profit by the experience of their neighbors who have made such changes, and that the more efficient use of tractors will mean a greater displacement of horses.

As to the value of the tractor for farm work there can be no question. It has been used in sufficient quantities and for a long enough time to prove conclusively that under most conditions farm operations can be carried on cheaper by means of the mechanical power plant than by horses. There are two reasons for this, first, mechanical power can be generated cheaper per unit than can animal power, and, second, mechanical power plants are better adapted for use in large sizes than are horses. Four or five horses make about as large a team as the average man is capable of handling either in hitching or driving, while with a tractor one man can easily control a machine of from 20 to 60 horse power, equivalent on the drawbar to from 10 to 30 horses.

Labor and Time-Saving Are Greatest Arguments

The tractor therefore permits one man to accomplish a great deal more work in a given time than is possible where horses are used. This feature alone would be amply sufficient to justify the adoption of tractors in place of horses for a great deal of farm work on a large percentage of farms, both because the use of the tractor makes it unnecessary to have so much help, which is frequently hard to obtain, and partly because of the actual financial saving due to having less wages to pay, not considering the lower cost of the tractor itself as compared with the cost of keeping its equivalent in horses.

Labor-saving equipment is just as important and valuable for farm work as in manufacturing establishments. Modern civilization with its many comforts, conveniences, and luxuries has been made possible only through the use of labor-saving equipment which permits a worker to produce through the means of improved tools a greater quantity of different articles than was possible with primitive methods.

No matter how much of an improvement an invention may be over old methods, there are always some reactionaries who endeavor to prevent its adoption either from selfish reasons or from good intentions based upon fallacious reasoning. This is true of the tractor just the same as it was of the spinning and weaving machines, the reaper, the steamboat, the locomotive, the automobile, etc., etc.

Such opposition, however, has very little effect upon the adoption of improved equipment. No matter to what line of business such improved tools belong, the men in that industry sooner or later recognize their value and will use them regardless of other people's opinions, once they become convinced that it is to their financial interest to do so. The first users of any new machines are usually broad-minded men who decide in their own minds upon the merits of a machine and do not wait to profit by someone else's experience, nor do they wait to be practically forced into adopting it because of the competition which they meet from men who have already put the new machines into operation. There are quite a good many people, however, who fall in the latter class and these are found among farmers just as well as among men in other industries. It is only to be expected therefore that many farmers will put off purchasing a tractor until they find that they are unable to produce crops at a profit, although their neighbors who are using tractors are able to do so.

Farming Business is Competitive

The business of farming is more competitive than most people realize, although it is easier for a man to remain in the farming business when he is making little or no profit than it is in most any other line of work, due to the fact that the farmer can exist in some fashion largely from the products of his own farm and can maintain his work stock from the same source. Nevertheless, most men do not care to continue in such a business unless they can make a profit approximately equal to that of their neighbors.

Not only is there an actual competition between farmers in the same country and in the same community, but there is also a competition between farmers of different countries. It is out of the question for farmers in one country, even though they may have a fertile soil, cheap labor, low transportation rates, good climatic conditions, and other advantages, but who are using inefficient methods in their work and who produce only a small quantity of crops per worker, to compete in the world's markets with farmers in another country or even in a different section of their own country who may have similar or even lesser advantages, but who make use of the most improved and efficient machinery and thus enable each worker to produce larger quantities of crops. The tractor has proved that it reduces cost in a great many types of farming in various countries. It is only a question of time therefore until it must be adopted by farmers in other countries who are engaged in similar types of farming. It is almost as essential as the grain drill and binder—it does better work at less cost, and does a great deal more of it than the old methods.

A Service That Builds Big Business

The Dealer Who Advocates the Proper Housing of Farm Machinery Can Never Justly Be Accused of Philanthropy—Increasing Buying Power of Farmers in District

By R. S. WILLIAMS

AT the risk of being made the target of much ribald criticism for dragging out a time-worn and threadbare subject, let us consider the care—or lack of care—of farm machinery on the average Canadian farm.

It is a matter of common note that the Canadian farmer, as a class, is most careless about housing and keeping up his high-priced implements. Here and there is a careful individual who builds a good weather-proof machine shed, takes down his machinery after using it, and by a judicious application of axle grease at certain essential places, makes his machinery last over a long period of years without undue expense. The few who do this merely emphasize the value that would accrue to the countryside if every farmer would adopt the same tactics.

Since the beginning of agriculture in this country, the blue sky has been the "Great Canadian Machine Shed" and if the sky were always blue it would not be so bad for the machines, regardless of the effect on the crops. However, blue skies have a habit of clouding up and deluging everything out of cover with copious quantities of rain and snow. Implements made of iron, steel and wood suffer badly from the elements and a fence corner or even a row of trees offers slight protection against wind-driven snow or soaking rain. Some farmers do not even remove the knives from their mowers and binders. This, of course, is ruinous to the sharp cutting edges to say the least, for it rests on the cutter bar in such a way that moisture collects under the knife sections, remaining there to rust and destroy the efficiency of the knife. Even though the knife has been removed from a binder or mower, every bearing on the machine is susceptible to the deteriorating effects of the weather. Rain washes out the oil, permitting rust to form and leaving the implement in such shape that when it is first started it pulls like a cat by the tail and the wear that takes place at all friction surfaces before the oil can get through is undoubtedly greater than would be experienced during an entire season of proper use.

It is impossible even to estimate closely the total value of the implements in use on the farms of Canada, but, of course, it runs into millions of dollars. Of this tremendous total any close observer is quite ready to grant that but a small proportion is housed in such a way as to preserve it and permit each machine to extend its usefulness over a period of years which the user would be justified in expecting from a machine of recognized quality.

The average life of a grain binder in Canada is nine years, yet the writer of this article has seen many binders cutting their nineteenth and twentieth seasons. Investigation in such cases invariably discloses that the owner takes his binder to pieces after the cutting season closes, wraps up the canvases carefully, greases all friction surfaces thoroughly and stores the entire machine in a clean, dry place. With this kind of care it is not at all out of reason for a binder to operate successfully over a period of twenty years. Estimating 200 acres as the yearly cutting, twenty years' use would make the total only 4,000 acres, which is very conservative indeed for a standard make binder. Now if the average binder lasts nine years, and there are occasionally binders which operate for fifteen to twenty years, it means that to bring the average down to nine there are a great many binders which are living from four to five years and then dying a premature and untimely death. A five-year-old binder ready for the junk heap is a binder that may have cut 1,200 acres of grain. Think of it—scrapping a binder that ought not to have the paint worn off, yet it is being done every year on too many farms in Canada.

It isn't the work of harvesting that puts a fine grain binder out of the running. It is the long days and long nights of idleness in some deserted fence corner or hedge row exposed to the beating rains of autumn, the icy blasts and driving snow of winter Nothing is more depressing than to see a high-priced farm machine crouching under a tree with the dry, dead leaves fluttering down upon it at every gust. You would go far to find an implement manufacturer who would be pleased to know that his brain child is serving as a wind break and a bird roost. It is not conducive to pride to see a cow breaking off real slats, because they are not strong enough to withstand her violent scratching.

What has been said here refers specifically to grain binders, but the same reasoning applies with equal force to any farm machine from a wheelbarrow to a tractor. The corn cultivator that normally should last ten years will suffer at least 50 per cent. depreciation every year through being left unhoused.

One cannot help but wonder if the careless farmer has never observed the rapid disintegration that takes place when iron or steel is left in a wet spot.

The Dealer's Duty

Now what does all this mean to the implement dealer? What has he to do with the care and preservation of farm machinery after it leaves his hands? His vocation is that of selling farm implements and repairs and a short-sighted individual might argue, as some actually have, that the more careless the farmer is about preserving his implements the more machines and repair parts a dealer will sell. Such conclusion, however, is erroneous. No lasting business can be built on destructive forces. A careful, thrifty farmer invariably is the best and safest customer because when he signs a note the dealer may be assured that it will be paid on the dot. Neglect of farm machinery might result in a larger implement business if there was no such thing as ambition, but where is the farmer who is content with 160 acres when he has the money in the bank to buy 160 more? The thrifty farmer is constantly expanding—buying more land, renting the adjoining patches, and extending his field of operation. This automatically forces the purchase of additional farm equipment, which means business for the implement man. The thrifty farmer is soon in position to buy tractors, threshers, ensilage cutters, shredders, and other heavy machinery, while the shiftless individual can never hope to reach a point of financial affluence where he can afford anything but the barest necessities. He is so busy replacing his supply of the necessary tools, such as plows, harrows, haying tools, and harvesting machines, that he never has a cent to spare to purchase a power washer, gasoline engine, or tractor. He is the type of man who attends regularly all auction sales and buys up second-hand machines that doubtless have served their allotted time in the fence corners. If they had not, their first owner would not be closing out at auction.

So it is plain that an implement dealer can never justly be accused of philanthropy in advocating proper housing of farm machinery. As a matter of fact, there is no crusade or reform he could affiliate with that would profit him so directly in dollars and cents. If, conceivably, he could persuade every farmer in his trade territory to build a tight, bright machine shed and then use it properly, there is no question but that his profits would steadily increase over a period of years. By preaching care of farm machinery the dealer is increasing the buying power of the farmers in his community. As their buying power increases he and every other merchant in town will receive direct benefits in the shape of increased business.

Profitable Repair Business

Take the repair trade, for instance, which is being recognized by all progressive dealers as one of the most remunerative factors in a successful implement business. Would you sell more repair parts if your farmers housed and cared for their implements—or would you not? At first thought you might say "No," but upon mature deliberation you would agree that your repair business would be better because a well-housed and well-kept farm implement is going to last so long before it actually is cast into the discard that its owner will spend quite a little money repairing it here and there where parts are badly worn. A machine that **rusts out** in a fence corner is not going to need half the repairs necessary to keep a machine going that is actually **wearing out.**

It is not philanthropy for your potential customers to buy more goods even though they enrich themselves by your suggestions. This is the age of service as many implement manufacturers are proving daily. Do you suppose the tractor manufacturer who spends thousands of dollars holding a series of tractor schools is losing money through his enterprise? At these schools students are taught how to operate, care for and repair their tractors. They are shown the latest and most approved methods for getting the most out of the tractor and the best ways of prolonging its life. If these schools were reducing tractor sales, do you believe they would be continued?

By keeping a tractor or any other farm implement running continuously and satisfactorily over a long period of years it becomes a profitable investment. Profitable investments mean money earned and saved—money in the bank is money that can be spent for additional equipment and improvements. It is a never-ending chain and the man who makes his purchases pay the biggest returns is the man who has the money to purchase the greatest amount, and usually he does it.

Think It Over

If you have never given this important phase of your business the consideration it deserved, do so now. Make it a point to find out what farmers are not giving their implements the right kind of care. They are not hard to find. You probably know a good many of them now. Sometimes the condition of the whole farm is a reflection of the same shiftless spirit that permits a binder to remain outdoors all winter. In such cases, usually the barn needs repairing and a generous application of paint. There are holes in it big enough to throw a cat through. The horses and cows shiver in the icy blasts that hurls itself through the rattling clap boards and drifts the snow about their feet. In summer the bottomless hog yard reeks in the blistering sun trying vainly to swallow the Augean manure pile that grows and grows from one year's end to another. This type of chap may be hopeless and be able to resist successfully all attempts to reform him. If so, let him go. Some thrifty neighbor will absorb him some fine day and make his farm blossom like the rose. The man who will respond most satisfactorily to suggestions is the really good farmer who has erroneously taken it for granted that it is unnecessary to care for farm machines because they are not alive.

In addition to personal suggestions you can secure from some of the larger manufacturers booklets and advertising relating to the care and upkeep of tractors and power machinery. Other companies supply blue prints for machine sheds in various sizes and styles.

All these hints, suggestions and helps work toward the same end—that of making the farmer a better friend to his machinery, and when that is accomplished, even in a small way, everybody in the community will benefit. Use every help you can originate or lay your hands on that will carry the message of better housing of farm implements. It will profit the farmer, but best of all, it will profit you.

Real Salesmanship Needed to Sell Farmers

Few Farmers Know They Need Cars or Tractors—It Is the Salesman's Job to Put the Bee in Their Bonnet

A SALESMAN travelled many miles from his home office to call on a farmer. He offered to sell this farmer a farm tractor—the farmer was not inclined to accept favors on such short acquaintance and politely declined.

He said he didn't need a tractor.

The salesman goes back to town, gets a room at the hotel—a nice room equipped with a shower bath and a Gideon. He visits the food emporium and eats a $2.00 steak with the conventional accessories. Then, being in an imaginative mood, he makes out his expense account and goes to a movie drama.

Later he returns to the hotel and writes a report on the call. It is an exhaustive report, embellished with superlatives, complete even to the most minute detail.

He tells how through some stroke of luck he succeeded in getting an unusually satisfactory interview with this particular farmer. Found that they had mutual acquaintances—in fact, a slight family connection on his Uncle's side!—used to know a chap at college who courted the farmer's daughter! On the strength of all this the whole family gave him a cordial reception—he even made friends with the dog—would just naturally have to admit that he got under the old man's skin.

Incidentally, would have sold him a tractor except that he said he didn't need one.

And the salesman having thus finished his two-hour report on his five-minute call, lovingly fondles the missive, puts it in an envelope, bids it God-speed and entrusts it to the care of our great postal system, where it went through the usual period of hibernation and was ultimately delivered to the Sales Manager, somewhat yellowed with age.

And the Sales Manager read it—he re-read it. He slept over it and he answered thusly:

"My dear Mr. Salesman:

"Although your report is above reproach from a rhetorical point of view, unfortunately we have no 'society column' in our correspondence file.

"Right now I don't remember whether it was Moses or Elbert Hubbard who said: 'Friendship founded on business is better than business founded on friendship'

"The man who shines in society is usually dull in business so let's put business at the top of the list—first, last and always.

"You say that this farmer doesn't need a tractor. Now let me tip you off to some real inside dope: **That's exactly why you were sent to see him!**

Farmers Have Yet to Realize Need for Tractors

"Few farmers know that they need tractors. Why, man alive! if they did know it, Sears-Roebuck and the Baltimore Bargain House would have monopolized the industry years ago!

"In his own opinion a man never needs a thing with which he is not familiar. Folks didn't need electricity until Tom Edison came along and put the bee in their bonnet!

"If the farmer realized the need of tractors we wouldn't have to spend good money for advertising. If he had learned all the advantages of power farming you and I both would be out in the shop helping production to catch up with sales or else we'd be trying to sell 'em something that they didn't know they needed!

"The kind of farmers that we are anxious to sell are pretty shrewd business men. Naturally they assume the offensive. Nine out of ten will tell you that they don't need tractors. The tenth one will buy anyway—no use spending much time with him!

"Some of these farmers will tell you they don't need a tractor just to hear the advantages reiterated again. It's music in their ears. Don't disappoint them—throw in your clutch and let 'em have the whole story—let 'em have it on high gear!—once, twice, three times if necessary!

"I'm afraid this particular farmer is a better salesman than you are. He seems to have sold you on the idea that he didn't need a tractor.

"The next time you meet that kind of fellow, just try this line of talk on him:

" 'Of course, you don't need a tractor—that is, you don't think you need one! But you're a business man and you're willing to be shown and I'm here to show you—here to show you why power farming has come to stay. Here to show you how a farm tractor can be profitably used—not up in the wilds nor down in the Mississippi Delta—but right here on your own farm!

" 'And incidentally—quite incidentally—I'm here to prove that my particular tractor is the one you need.'

"—and let him have it. Let him have facts—let him have 'em straight from the shoulder—the truth is good enough.

"You don't need to resort to pedigree entanglements or secret alliances when you are out to sell an honest-to-goodness tractor—a tractor that's guaranteed to pull three bottoms through virgin soil!"

With The Manufacturers

The Cleveland Tractor Co., of Canada announce that their eastern head office will be moved from Montreal back to Windsor where it was formerly located.

The Manley Manufacturing Co., York, Pa., announce that they have purchased the unfinished stock, dies, jigs, fixtures, patterns, patents and good will of the Ellis Smith Mfg. Co.

The National Carbon Co., Inc., Cleveland, O., recently made a substantial reduction in price of all standard types of Columbian dry batteries, effective June 1.

The Allis-Chalmers Mfg. Co., tractor division, Milwaukee, announce the establishment of a Mexican distributing point, under the direction of A.E. Bates, Monterey, N. L., Mexico.

The Motor Products Corporation, Ltd., Walkerville, Ontario, are issuing a new illustrated price list of their Canadian-made wind-shields and automobile accessories.

The General Motors Company announces the distribution of 123,000 shares of stock by way of bonus to efficient employees, the distribution to begin at once.

J. Ernest Millen, of John Millen and Son, Limited, dealers in automotive equipment, Montreal, Canada, has been elected a senior member of the Old Timers' Club.

The Sandwich Mfg. Co., of Sandwich, Ill., announced recently another reduction in their line of hay loaders, hay presses, portable elevators and spreaders.

On June 1, 1921, Howard Seely, manager of the tractor plow department of the Oliver Chilled Plow Works, South Bend, Ind., resigned from that office to take a much-needed rest.

The Niagara Equipment Co., Niagara Falls, Ont., have completed arrangements with the American producers of Red Dolly jacks, and are now manufacturing same in Canada for the Canadian trade.

The board of directors of the International India Rubber Corporation, South Bend, Indiana, announce that the name of the company has been officially changed and will now be known as the Odell Rubber Company.

F. W. Hunt, of the Massey-Harris Co., Ltd., attended the semi-annual convention of the Association of Canadian Advertisers held June 2, 3 and 4 at the Windsor Hotel, Montreal. Mr. Hunt took part in the programme.

Hilton W. Sofield, former vice-president and general manager of the Keystone Truck Co., of Philadelphia, has incorporated a new company, known as the Penn Motors Corp., for the purpose of manufacturing popular size trucks.

W. R. Petze, sales manager of branches for the Splitdorf Electrical Company has resigned to take a position with the Sterno Corporation, New York in the capacity of general sales manager of the Automotive Accessories Division.

The Russell Gear and Machine Co. of Toronto have taken over the British Empire rights of the Billmount wrenches and will manufacture same at their plant in Toronto. A. J. Hopkins of 392 St. James street, Montreal, has the Canadian agency for these wrenches.

R. C. Ellsworth, secretary to F. A. Seiberling, former head of the Goodyear Tire and Rubber Co., has purchased the New Castle Tire and Rubber Company plant at New Castle, Pa., for Mr. Seiberling. It is believed that other purchases of tire companies by Mr. Seiberling will follow.

R. C. Brewsaugh has been appointed advertising manager of the tractor division of the Allis-Chalmers Mfg. Co., Milwaukee, Wis., succeeding L. C. Pounds, who has been made assistant manager of the tractor division.

The Clark-Turner Piston Co., of Los Angeles, manufacturers of De Luxe light weight cast iron pistons, announce the appointment of the Laystall Motor Engineering Works, Limited, of London, England, as distributors of DeLuxe pistons for Great Britain and Ireland.

The Black and Decker Mfg. Co., Towson Heights, Baltimore, Md., announce the opening of a new branch at Kansas City in charge of J. N. La Belle, formerly assistant manager of the Chicago branch. The Black and Decker Co. also announce that they are now delivering drills and valve grinders from their new plant at Montreal, and are manufacturing bench post drills at Niagara Falls, Ont.

The Canadian Johns-Manville Co., Ltd., which for some years has been operating one of the largest asbestos properties in the world, located at Asbestos, P. Q., has placed contracts for a large manufacturing plant to be located at Asbestos, P.Q., to manufacture all classes of asbestos products formerly imported from the United States. These products include brake band lining, pipe covering, packing, etc.

According to A. M. McQueen, of the Imperial Oil Company, at Calgary, his company has expended to date more than two million dollars in making preparations, bringing in machinery and well drilling crews, and organizing gangs of drillers who are putting down holes from the international boundary north, almost to the Arctic Ocean. In addition to this, the Imperial Oil Company has erected its own machine shop in Calgary and is doing all repair work on its drilling outfits used in Alberta and Saskatchewan.

More Tractor and Ensilage Cutter Business

An investigation among a large number of farmers has shown that cutting ensilage and putting it into the silo make up half the cost of producing this crop. A reduction in the cost of these operations means increased profits to the farmer.

Here is a strong sales point for the **International Ensilage Cutter** with an **International 8-16, Titan 10-20 or International 15-30 Tractor.** On thousands of farms, this dependable combination is reducing the cost of producing ensilage.

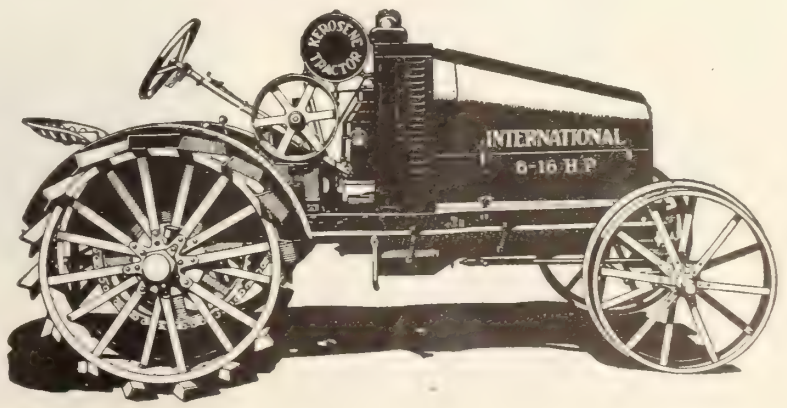
International 8-16, Titan 10-20 and International the knife and blower fan are mounted on the heavy steel flywheel so that cutting and elevating are done in one operation. Their high-grade materials and practical, sturdy design adapted to low speed save repair bills. Extra large capacities—from 6 to 25 tons per hour—save time.

International 8-16, Titan 10-20 and International 15-30 Tractors deliver efficient, low-cost belt power. The belt pulleys are large and wide and are located to make lining up easy and keep the belt off the ground. A throttle governor controls the load at all speeds and saves fuel without requiring a man at the tractor. Working parts are durable and thoroughly protected.

International agents who are going out after business are using these sales points to increase their trade in ensilage machinery. Ask the blockman for further information and sales helps.

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD
HAMILTON CANADA

Western Branches—Brandon, Winnipeg, Man.; Calgary, Edmonton, Lethbridge, Alta.; Estevan, N. Battleford, Regina, Saskatoon, Yorkton, Sask.
Eastern Branches—Hamilton, London, Ottawa, Ont.; Montreal, Quebec, Que.; St. John, N.B.



Small Thresher Has Big Economy Appeal

The Individual Thresher Is Rapidly Becoming Popular With Farmers--Live Dealers See In This New Field Opportunities for More Business at Big Profits

By A. M. SEDWICK

AVERY Company

THE multi-fold advantages of the individual thresher are making for it an ever-growing place on the Canadian farm; as one owner puts it, "I think an individual thresher would pay if one had only 320 acres of grain for then he could thresh when he wanted."

Time is one of the strongholds of the automobile, the airplane, the train, the wireless, the telephone, the tractor, the motor cultivator, the "Road-Razer," and likewise time is one of the big strongholds of the individual thresher.

If John Jones is desirous of owning a thresher for his own use, he can well afford the investment, providing of course his acreage warrants the use of it. The time saved, while he would be waiting for the custom outfit might result in a saving due to getting the grain on the market at the peak of prices, instead of having to wait between 10 and 35 days.

A not uncommon incident was recently called to our attention of a case where several farmers finished their threshing with an individual outfit 34 days before the custom outfit could have reached them. During these 34 days which the small thresher saved, the price of oats had dropped 18 cents a bushel.

Besides being able to get the grain on the earlier, the small outfit owner does not have to lose a large per cent of the grain due to weathering or insects. After a rain and a week or two of hot weather, the shocked grain frequently begins to sprout and spoil. With the individual thresher this loss is wiped out.

Another saving is that of the labor necessary to run the outfit. This item decreases much faster than the capacity of the machine. There is a well-known farmer who uses an individual outfit, driving it with a 12 horsepower tractor part of the time, and with an 18 horsepower tractor the remainder of the time. Instead of a gang of about 30 men, he threshes with seven men besides the machine man. With this small number of men, about one-fourth the number required with the large outfit. he threshes more than half as much grain as the larger outfit which requires four times as many men.

Co-operatively-Owned Outfit.

An adaptation of the individual thresher is seen in the co-operatively-owned outfit which usually is organized with a tractor owner as a nucleus, and the thresher owned by a company group of farmers. The cost of such a thresher to be operated with a 16- or 20-horsepower tractor would be about $1,000, equipped with self-feeder, windstacker, and weigher.

The size of the company can be adjusted to fit the acreages owned. An outfit that is easily organized and managed, and which can easily finance the purchase of the thresher, would be six men, one of whom owns a suitable size tractor, he to furnish the supplies for the tractor and to be given one-third or one-half the stock of the company. The other five men purchase the separator, preferably about a 30-in. machine, each farmer taking stock in proportion to his investment. Some times the policy is adapted of having the man the outfit is threshing for, furnish the fuel for the tractor.

The same charge as that of the larger outfits is made both to members of the organization and to outsiders they may thresh for. At the end of the year the expenses are paid, and the remaining profit, if any, is divided among the stock-holders in proportion to the amount of stock owned.

One outfit so operated paid a yearly dividend of ten per cent. on the original investment, besides a saving of grain, and a saving due to drop of market price.

When several farmers are threshing together and for themselves, they work more conscientiously and there is much less forcing of the separator, resulting in a consequent saving of grain, always found in a steadily run and nicely adjusted machine.

An ideal organization would be one that consists of six or seven men, a tractor, and a company owned thresher, silo-filler and corn sheller. The same men will work together each year, resulting usually in harmony of feeling and work. For in a small crew each one can have a special job that will be his duty and the value of co-operation and harmony is soon seen and strived after.

Easier on the Women

The difference between a ring of 30 men and a force of only seven, means the difference between feeding 30 and feeding seven. This means a much easier job for the women, and the cost is much less. Better meals with more good things can be served when less has to be cooked. The harmony of the ring is also carried into the kitchen.

Such outfits, or even individually-owned threshers are not idealistic, they are practical and proved so, as can be seen by the following statement made recently by a farmer who owns a small thresher.

"I want to say right here that the little separator is sure a wheat thresher. People call it a 'coffee mill' and a 'peanut roaster,' but they all want me to thresh for them, and the chickens and hogs have no interest in the straw stacks. I pulled it with a 12.25."

Time to Push Harvesting Machinery

By B. J. PAULSON.

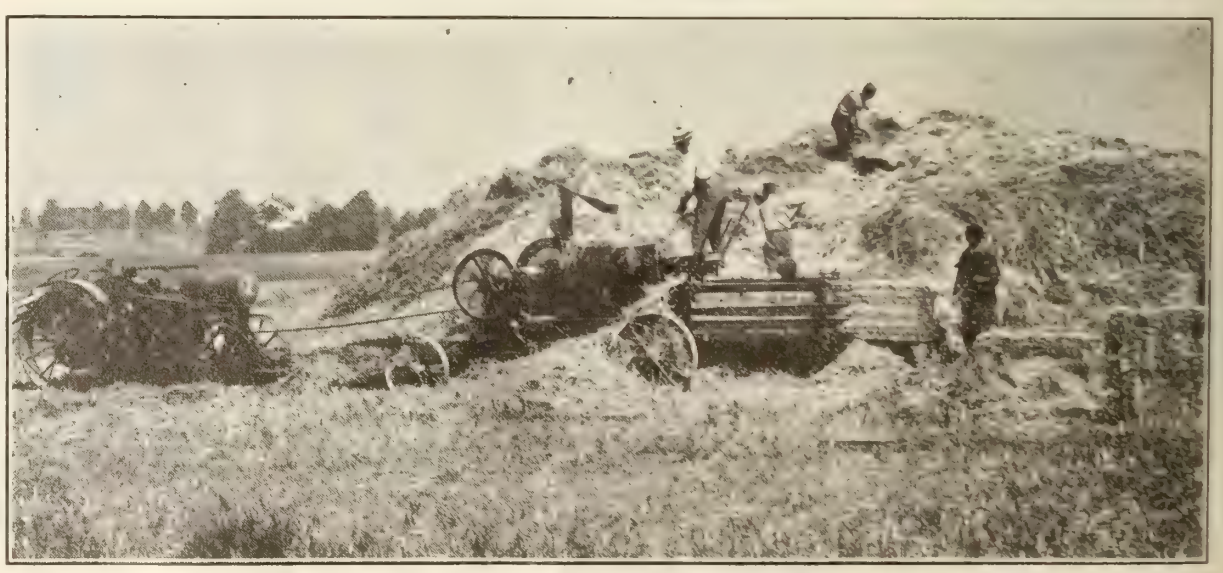
NOW that the first of the crops are almost ready to harvest, the farmer will be checking up on his harvesting equipment to see how he is fixed to handle them. Perhaps he needs a new binder in order to harvest his grain without danger of expensive delays in the field. His old one, although it may be a mighty good machine, may have reached the point where, like the "one-horse shay" of poetic fame, it is ready to go to pieces all over at the same time. That would certainly be disastrous right in the middle of harvest. Or the binder may have outlived its day of usefulness and possibly doesn't do a good job of tying; or perhaps it doesn't do a clean job of cutting—or any one of a number of things that mean a loss to the farmer.

Speed Farmers to Buying Point.

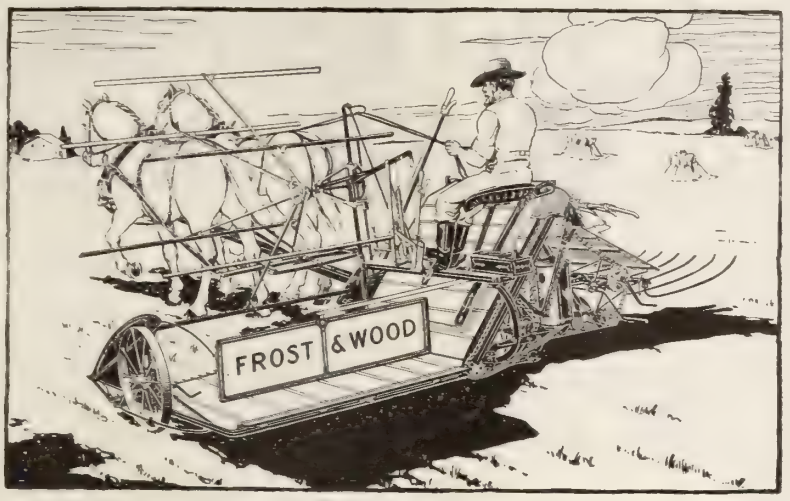
Maybe the farmer will think about these things and maybe he won't. But taking it for granted that he **does** think of them, that doesn't necessarily mean that he is going to **act** on this constructive thinking —unless someone comes along and hands him a jolt that is going to cause him to buy the new binder without further delay. The farmer is pretty much like the rest of us—he is just naturally going to wait until the very last minute before he places his order for new harvesting machinery—or any other kind, for that matter—unless **you,** the dealer, speed him up a bit.

There is no time like the present for harvesting harvest machinery orders. With the memory of several months of hard work still fresh in his mind, the farmer is going to be open to arguments that will tend to show him that in order to get the greatest profit return from that labor, expense, and work, it's up to him to supply himself with efficient, dependable harvesting equipment. What good does it do him to buy good seed, plow the ground to the right depth, harrow and disc it until he has a finely worked, mellow seed-bed, plant the seed with an expensive grain drill—what good does it do him, I repeat, to go to all this trouble and expense if he is going to shirk the greatest responsibility of all—harvest? Harvest is the one time during the entire season that the crop is within the farmer's reach. Whether or not he saves it is a matter that rests with him—and the equipment he uses.

You, no doubt, have a lot of good arguments that you can give to your customers on this subject. Why not trot 'em out and put them through their paces—see if they still have their old-time pep and go? Hitch them to a good sales talk and see if you can't ride away with a flock of orders for new harvesting machinery! Right now is the psychological moment, as the scientific fellows would put it, to interest the farmer in harvest machines. The crops are ripening and coming along nicely and naturally the farmer feels optimistic. A little later on he may not be feeling quite as cheerful. And a little later on when you'll be jumping forty ways trying to set up and deliver machines to last-minute purchasers, you won't be feeling quite as cheerful as you might, either. So while everybody is happy why not make it a unanimous affair—make the farmer happier by fixing him up with needed new harvesting machinery and by that charitable act make yourself quite a bit happier, too. Someone has said that "nothing succeeds like success." That's right—but success doesn't come around hunting for a home. There are plenty of fellows who are glad to go out of their way to find it. That's what most implement dealers have to do—go out into the highways and by-ways and **hunt** for success. It's there—but you've got to find it, whether it's gathering harvesting machinery orders or selling incubators.



A Tractor Operating a Hay Baler in the Field



Success in the Field Means Success in Sales

From the standpoint of the dealer, the highest assurance of success in sales is the success which the Frost & Wood Corn Binder has achieved in the field.

Frost & Wood Corn Binder

The Frost & Wood Corn Binder has those qualities which experienced farmers demand and look for.

It insures uniform bundles because it is adjustable to any height of crop.

It is easy to control in operation, for three easily reached levers make all necessary adjustments.

It is substantial in construction, and the use of high carbon steel combines strength with light weight.

Generous sized roller bearings used at all friction points make light draft for horses—therefore quicker work and more satisfaction.

It takes the furrows evenly, for the grain wheels and drive wheels are of equal height—therefore operates with minimum strain on both machine and driver.

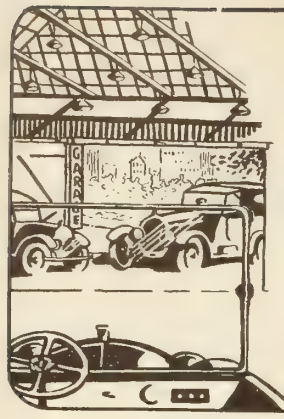
Advertising has made these and other advantages of the Frost & Wood Corn Binder well known—another big advantage from the dealer's standpoint.

Supplies of literature gladly forwarded on request.

The Frost & Wood Co.
LIMITED
SMITH FALLS, Ont.
Montreal, Que. St. John, N. B.

Sold in Western Ontario and Western Canada by

Cockshutt Plow Co.
LIMITED
Brantford, Ontario
WINNIPEG, REGINA,
SASKATOON, CALGARY, EDMONTON



SHOP NOTES FOR THE GARAGE MAN

Lessons on Welding Automobile Frames

(From CANADIAN MACHINERY)

FRACTURES of automobile frames are most likely to occur at or near some connecting cross member, and often in positions where it is inadvisable or impossible to insert or use any additional strengthening material, or where the use of such material might entail an expensive labor bill and keep the car out of service for several days.

Exhaustive tests have been made to determine the efficiency of welded work, the best of which may be mentioned as that of frames welded several seasons past, and which have since been in continuous service, some of them under the most trying conditions over rural and mountain roads.

More impressive tests have been made by testing such welded frames under powerful presses to determine their endurance under bending strains sufficient to buckle the original material. Crushing and tensile tests of welded sections have also been made, in all of which the results of well executed welds have proved most gratifying, many instances being on record where the strength of the repair was equal to or greater than that of the frame itself.

Compensation for Services

Granting that the welder is qualified to do work of this character; one of the first questions that arise is "What should the car owner pay?" Shall he be charged the customary price for labor and material, or shall an additional charge be made?

At first thought it seems an extortion to charge an owner a fancy price for a repair simply because few shops are willing to undertake it and without such repair his car is useless. He must either pay what is asked, purchase an entire new frame which may require weeks to deliver,or else lose his original investment in the car.

For welding repairs which can be made by the ordinary "metal melter" the shop is justified in charging for the services of the journeyman mechanic. When it is necessary to send out for an expert in any particular line the shop is justified in charging for his services plus a small percentage of profit. If the expert who is able to make this repair is available as one of the regular mechanics of the shop, it cannot be denied that while engaged in work of this nature the shop is entitled to compensation for the services rendered just as though an expert had been called in for the purpose.

In most cases those who can do this work have spent some time and a certain amount of hard earned money to secure instruction at the hands of other experts. The cost of such instruction represents an investment upon which they are entitled to returns.

Causes of Failure

1. Improper Regulation of the Flame.
2. Working the Weld in the Wrong Direction.

Chief of all causes of failure should be mentioned the improper adjustment of the welding flame. Not one welder in a dozen knows how to secure the true "neutral flame" that is absolutely essential to the efficient weld. The freedom of a flame from being carbonized or oxidized is not necessarily indicated by the clear outline of the cone. This clear outline merely indicates that all the particles of oxygen and carbon coming in contact with each other are burned. An excess of oxygen passed through the flame will drive before it a corresponding quality of acetylene, therefore it follows that: The welding flame may be at one and the same time both oxidizing and carbonizing. The consumption of equal quantities of oxygen and acetylene means nothing. The use of excess oxygen, commonly called a waste of oxygen, means a corresponding but slightly lessened waste of acetylene.

If a reducing flame is produced by an excess of acetylene the weld will be hard and brittle. The same result may obtain from the use of a tip too small or a torch of inadequate capacity to perform the work with the required rapidity. A bubble, slightly reddish in color, just beneath the surface of the melted metal is an indication of an excess of acetylene, and absorption of carbon by the metal. Frothing, foaming and excessive discharges of sparks are indications of excess of oxygen.

Suggestions For Good Work.

It is gratifying to state that with reasonable care in the regulation of the flame the ill effects of excesses of either or both of these gases may to some extent be neutralized or overcome by the experienced operator. Some suggestions follow:

(a) Commence vertical welds at the bottom and work upward. See Figs. 29 and 30. This prevents the deposit in the weld of any excess of gases that may be present, or of the products of combustion in the outer envelope of the flame.

(b) Keep the torch in motion from side to side, making sure that each ripple extends the full width of the weld. To hold the torch "dead," that is without motion, will cause the deposit within the weld of the products of combustion, and with an inexperienced operator will cause the metal to become locally over-heated and to spill out of the weld.

(c) To carry inadequate acetylene pressures is to effect improper combustion. The pressure given in tables furnished by torch manufacturers apply to pressures actually delivered to the tip. From two to five pounds excess pressure should be carried at the regulator to allow for the lowering of pressure while passing through the hose to the torch.

(l) With equal pressure and injector types of torches the pressure at the regulator should be sufficient to cause the flame to break away from the tip of the torch with the torch valve two half turns open. With torches which mix the gases by the stirring process all that is necessary is to turn on enough acetylene to secure perfect combustion. When this point is reached smoke will cease to be given off from the end of the flame.

(e) The use of high oxygen pressures is unnecessary and fatal to good welding. The flame can not be forced back into the acetylene line if the oxygen pressure is slightly lower than that of the acetylene. Aside from the production of superior welds the use of low oxygen pressures is decidedly economical.

(f) To secure the proper bevel, experience has proved that a bevel of at least 45 degrees is absolutely essential to secure proper fusion of both faces of the parts to be joined. Attempts to melt out the bevel with the torch are as a rule unsuccessful. The bevel may be cut out with the cutting torch provided all traces of slag are afterward removed with a chisel or wire brush.

(g) As in boiler welding it is essential to allow an opening of one-eighth inch, NO MORE NO LESS, between the beveled edges. This permits the flame to penetrate the weld properly without causing the bottom of the bevel to break down and spill out on the reverse side.

Plastic Welding

Many welders of the old school will say "Your ripple weld does look a little prettier, but my plastic weld is just as good." The plastic weld is defective because of:

(h) Interposition of oxide between the wide fills thereof through which sufficient heat can not be transmitted to cause proper fusion with the edjoining metal.

(i) In the plastic weld the added metal is not manipulated, and is therefore in a "cast" condition possessing very little strength.

Proper manipulation of the weld does for it what forging or rolling did for the original ingot. In addition t_0 this it also helps to bring any impurities to the surface and float them out of the weld. The addition of the very small amount of metal necessary to make the ripple permits it to be thoroughly fused with the adjoining bottom and sides of the weld. The welder who holds a "dead rod" can not hope to produce a weld of very great strength. The grain of such a weld will be extremely coarse.

(j) Heating and hammering are not recommended in such cases. This practice may have its uses, but the automobile frame should not be so treated.

Pre-Heating.

(k) Such pre-heating as may be necessary in welding automobile frames should be done with the welding torch. The use of other torches for pre-heating may unnecessarily anneal the parts to be welded causing loss of strength. In addition there may be deposited in the weld certain impurities that may cause the weld to become defective.

Improper Fusion

The average welder is over-anxious to "get the work going" by the addition of the welding rod. The appearance of a film of oxide on the surface of the heated metal is often mistaken for the fusion of the metal itself. This may be due to (1) the use of a torch in which the gases are not properly stirred together, (m) the use of an excess of oyygen, improper motion imparted to the torch—that is a successive lifting and lowering of the flame—causing the oxygen of the surrounding air to produce a destructive effect upon the heated surfaces; or to many other causes.

(n) Holding the torch at an improper angle, (o) a slovenly, jerky motion or otherwise improper motion imparted to the torch—generally the result of wrist instead of free arm movement, (p) the use of a welding tip of a size unsuited to the work, the too rapid or improper addition of the welding rod, (q) or its addition before the bottom and sides of the weld are in proper fusion are common faults. To overcome these faults it may be necessary to have some other welder study and observe your use of the torch. This in the end is the safest and least expensive plan, since the loss from the failure of even a single weld may amount to a far greater loss than would be thus expended. Those faults which do not detract from the appearance of the weld are extremely serious, since that which has a perfectly sound appearance may have a line of weakness throughout its entire structure.

(r) Another example of improper fusion is the tendency of some to cover too little area with the torch, and to "slick" away the fused metal from the edges of the weld by burrowing into them with the flame. The danger sign in this case is the rapid flowing away of the metal from an edge that presents a reddish appearance and distinctly shows the grain of the metal. (s) An excessive oxygen pressure may cause the same trouble.

Clean Surfaces

Clean surfaces are absolutely necessary for making good welds. (t) If scale, rust or grease is permitted to remain on the surface to be welded, a slag is formed that will make a streaked and seamy weld. All welded surfaces and those adjoining must be kept free from foreign substances. (u) All traces of brass, zinc, babbitt, solder, etc., must be removed from the welding zone.

GOTFREDSON-JOYCE INCREASE CAPITAL

IN order to provide the capital necessary for the manufacture and marketing of two new models and to furnish additional capital for a rapidly expanding business, the stockholders of the Gotfredson-Joyce Corporation, Ltd., motor truck manufacturers in Walkerville, Ont., recently ratified the recommendations of their directors to increase the capital stock of the Corporation from $100,000 to $500,000.

The corporation is now in production on a 2-ton and a 3½-ton model. Their experimental department is working on a 1-ton model, and will later take up the work of designing a 5-ton job.

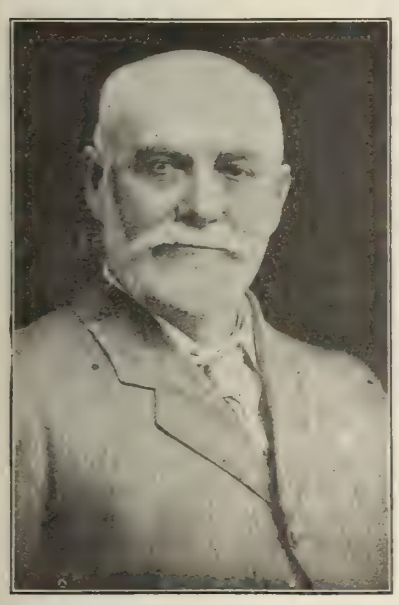
The officers of the corporation are Benjamin Gotfredson, president; R. B. Gotfredson, vice-president, and Frank H. Joyce, secretary and treasurer. Benjamin Gotfredson and Frank H. Joyce are also officers of the American Auto Trimming Co., with factories in Walkerville, Detroit and Cleveland.

PRESIDENT OF BEATTY BROS. IS DEAD

GEORGE BEATTY, president and founder of Beatty Bros., of Fergus, Ont., died at Fergus on June 16 after a short illness.

Mr. Beatty was born on a farm in Albany Township, 30 miles from Toronto in the year 1846. He came to Fergus in the spring of the year 1874, 47 years ago and with his brother Matthew, who was a farmer, founded the manufacturing firm of Beatty Bros.

Mr. Geo. Beatty was a machinist, pattern-maker and inventor. He invented many devices, and took out



LATE GEORGE BEATTY
President of Beatty Bros.

many patents on the implements he designed. His reaper received the Gold Medal at Toronto Exhibition in competition with all the prominent makes. This was in the days before the self-binder was known.

He continued the business alone after 1886 in which year his brother Matthew died, until the year 1901 when he was joined by his sons W. G. Beatty and M. J. Beatty.

Mr. Beatty was interested in every department of the firm and until almost the week of his death took an active part in the sales, credit and financial departments, as well as in the various manufacturing interests of the business. His all-round experience, extraordinary ability and buoyant optimism have been of inestimable value in the development of the firm of Beatty Bros. Limited to a position of international importance.

BRITISH COLUMBIA AUTOMOBILE DEALERS ACTIVE

NOT a year has gone by since the automotive section of the British Columbia branch of the R. M. A. of Canada was organized, yet great good has already been done.

Nor is the work all done now.

Each day brings forth trade difficulties which could not be surmounted by any individual dealer, nor any number of unorganized dealers.

The resolution passed at a meeting of the Automotive section, held recently in the office of the R.M.A., Vancouver, clearly states what is the matter, and what is to be done.

The following is the resolution:

WHEREAS the cost of conducting a retail tire service establishment is estimated by competent authorities to be from 15 to 20 per cent, and

WHEREAS a reduction in the selling price of tires has been made effective May 16th, 1921, averaging approximately 15 per cent on all sizes and qualities, thus compelling the tire dealer to render service at cost or even less, this Automotive section of the B. C. Board of the Retail Merchants' Association of Canada,

HEREBY GO ON RECORD as emphatically protesting against the action of Canadian tire manufacturers in arbitrarily reducing the retail dealers' margin of profit.

In view of the fact that, as set out in the preceding paragraph, this action practically means forcing the retail dealer to do business without remuneration,

IT IS FURTHER RESOLVED that the Canadian tire manufacturers be immediately requested to restore the dealers' margin of profit to not less than 20 per cent off consumers' list price, and,

IT IS HEREBY ORDERED that a copy of this resolution be immediately forwarded to every provincial branch of the R.M.A. throughout Canada, to the Dominion secretary at Ottawa, and to the Canadian tire manufacturers through their B. C. representatives.

Behind these organized retail tire dealers stand the entire body of organized retail merchants, not only in British Columbia, but throughout every province in Canada.

The recent ruling in Ottawa, which sets aside the assumption that tailors, candy makers, tinsmiths, milliners and a score of others are manufacturers within the meaning of the sales tax, is a signal victory for the organized retailers and shows their strength.

GASOLINE DOWN TWO CENTS

THE retail quotation on gasoline now is 37 cents, as against 39 last week. Over-production of crude explains the drop.

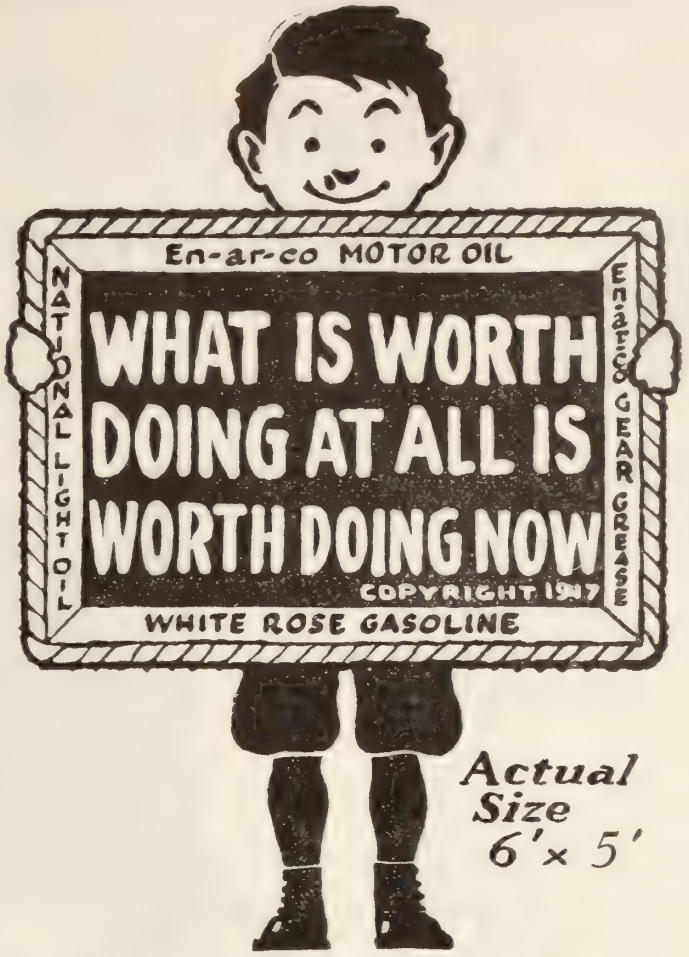
"It is quite probable the price will go lower still," says J. McNeill, in command of this department of the Imperial Oil's operations. "And then again it may advance. It all depends on the condition in crude. Ninety-five per cent of the gasoline used in Canada is imported in the crude from across the line and refined in Canada."

At the first of the year the Canadian wholesale price of gasoline was 42c; it is now 33c.

NEW TRUCK CONCERN

THE Harmer-Knowles Motor Truck Company, Van Horne St., Toronto, is a new concern manufacturing motor trucks in three sizes—1 1-2, 2 1-2 and 3 1-2 tons capacity. They are now under production. The motor used is a Midwest, with a patent forced feed oiling system and, the makers claim, developing 42 h.p. at 1.200 r.p.m. The motor is 4 1-8 in. bore by 5 1-4 in. stroke.

A four-speed transmission, mounted amidships, for accessibility and balance, is provided. The clutch is of the multiple disc dry-plate type, with control set mounted on the clutch housing. The rear axle is of the worm-drive type with large sized worm and worm wheel.


En-ar-co MOTOR OIL
NATIONAL LIGHT OIL
En-ar-co GEAR GREASE
WHAT IS WORTH DOING AT ALL IS WORTH DOING NOW
COPYRIGHT 1917
WHITE ROSE GASOLINE
Actual Size 6' x 5'

HIRE THIS BOY

He will get the Business

Put him out in front of your store. Chalk up a new epigram on his slate every other day. Let this sturdy 6-foot sign draw the attention of the crowds your way.

This famed En-ar-co Boy and Slate sign will do it. Other dealers in "gas" and oil have, after trying it out, been greatly surprised at the extra business the sign has produced.

We want you to get this sign. First, let us tell you about our plan for supplying it—along with the particulars of our system for providing the novel, interesting, catchy sayings for the big slate. Use the coupon now. No obligation.

CANADIAN OIL COMPANIES
LIMITED

BRANCHES:

Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary.

To CANADIAN OIL COMPANIES, LIMITED,
Nearest
Branch .....
Send me the information about that En-ar-co Boy and Slate Proposition.

NAME .....

ADDRESS .....

TOWN or CITY .....

I AM IN THE ..... BUSINESS
(Indicate kind of Business) MTI7

Automotive Accessories *and* Implement Equipment

AUTOSHAFT MILLER

THE DIXIE autoshaft miller, the makers claim, enables a mechanic to true crankshaft bearings in less time than is required on a lathe. It is so constructed that connecting-rod bearings can be trued in place in the motor. It weighs five pounds and is eleven inches long, and will fit practically every car. The makers say it is adjustable to shafts ranging between one and a half to two and a half inches in diameter. It has only one cutting blade, which can be set to cut any desired amount. The blade can easily be removed and sharpened and can be supplied in widths up to three inches. A micrometer adjustment enables the repairman to do accurate work. The entire tool is constructed of steel and aluminum. Made by the Southern Machine and Tool Company.

MOTOR AMBULANCE

THIS MOTOR ambulance, manufactured by the Simplicity Products Mfg. Co., is built entirely of steel and it is claimed that there are no small parts to fall off, mislay or lose. A swivel, fitted with a locking device when used under the rear end, provides easy turning.

The yoke provided is of spring steel, one and one half inches square by twenty seven and one half inches wide, and is designed to cradle any differential housing. It is fastened by means of adjustable clamps which fit any axle. The ambulance is furnished with cast steel wheels fitted with standard solid rubber tires, truck type, sixteen by three and one half. The pole is of special design, is seven feet long and adjustable to twelve feet.The weight is 210 pounds. Finished in grey and black enamal.

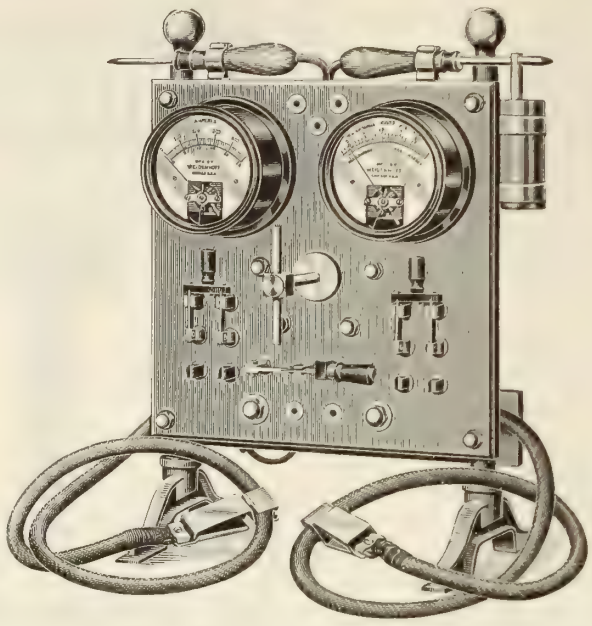
HOVEY WOOD CREEPERS

THESE creepers are made of seasoned oak and maple and are furnished with or without tool trays. With trays they are twenty four inches wide and thirty inches long. The head rest is four by seven inches and extends out seven inches farther than the body proper. Without tool trays they are fifteen and one half inches wide, other dimensions the same. Manufactured by J. H. Whetstone and Co., Inc.

BEAD CUTTER

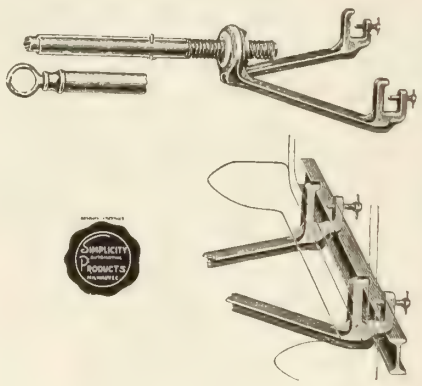
THIS cutter is designed to cut the beads off all kinds of tires and all sizes. The makers claim it will also cut strips, irregular shapes and circles. A special feature is a ply-regulator. This device regulates the cutting depth and is instantly adjusted by two thumb screws—one in the top of the head casting and one in the back of the regulator casting. The blades are of high grade tool steel, hardened and ground to size. The feed wheel, it is claimed, is of ample size to insure easy operation.

The head raises and opens to admit the bead between the blade and the feed. The lever when pulled down locks automatically. The makers state the bead cutter is quick, simple and easy to operate, and no clamps or screws to be fastened. Manufactured by the American Shoe Machinery and Tool Co.

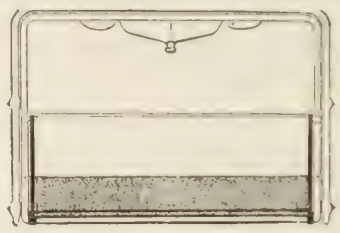


Storage Battery Discharge Set.

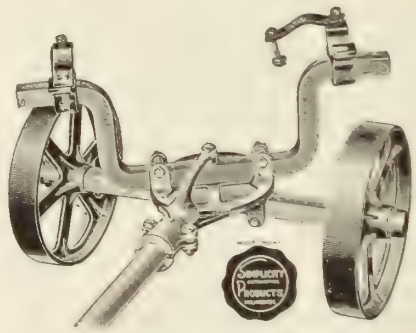
Rajah Spark Plug.



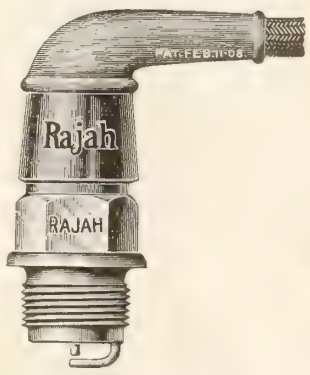
Simplicity Towing Pole.



Kennedy Windshield Vision Shade



Motor Ambulance



Rajah Spark Plug.

Hovey Wood Creeper

KENNEDY WINDSHIELD VISION SHADE

THIS windshield shade is designed for the protection of the motorist from glaring headlights and blinding sun. It is adjustable to any position from inside the car. It is secured to the windshield by a positive clamp and, it is claimed, it cannot slip or shake loose.

It consists of a Hartshorn roller, a shade of Holland linen, and steel brackets to guide the steel rod running through the bottom of the shade. The bracket for the roller and the bracket over the top of the windshield are stamped in one piece from heavy steel. The flat pressure bar is made from solid steel, ½ x ⅛ inches, and is held in position by two bolts with springs and adjusting nuts. The back piece incorporates a corrugated and flat bar in one piece stamped cold from solid steel. When it is desired to drive with the windshield open, the makers claim it may still be used, either pulled right to the bottom of the upper half of the windshield, thus acting as an ordinary visor, or in any intermediate position. Made by Kennedy and Kennedy, Toronto.

RAJAH SPARK PLUG

RAJAH spark plugs are claimed to produce more power, higher speed and a quicker pick-up. A special button top and quick detachable terminal eliminate the thumb screw type. These plugs are of simple construction, easily taken apart, cleaned and replaced. The parts are interchangeable.

A patented knife edge bushing adjusts itself to shoulder of the porcelain and permits heat expansion, it is claimed, without injury to the porcelain. They are made for all passenger cars, trucks and tractors as well as stationary, marine, motorcycle and airplane engines. Made by the Rajah Auto Supply Co.

BATTERY TURNTABLE

WHEN REPAIRING batteries, in order to do careful work the batteries must be turned frequently. If this turning can be accomplished without lifting, a great deal of labor is saved and better work can be done. J. H. Whetstone and Co., Inc., recently put on the market a device to accomplish this operation known as the Hovey battery turntable. It can be used for repairing batteries, starters, magnetos or generators. It has a top, seven by ten inches by one and one half inches, of hard maple and is equipped with a roller bearing base.

SIMPLICITY TOWING POLE

THE fork of this towing pole attaches to the front axle from the lower side and fastens by means of locking screws. The makers claim a positive hold is secured and complete control of the rear car maintained. The fork is electric steel annealed and the swivel is of the ball and socket oscillating type. The length is eight feet over all and the weight is forty pounds. The oscillating swivel allows a short turning radius. Springs having a double action effect counteract, it is claimed, starting and stopping jars. Manufactured by the Simplicity Products Mfg. Co.

Dealers Should Know What It's Made Of

By G. H. SMITH. Allegheny Gear Works

JUST out of curiosity I recently stopped to talk with an implement dealer in a fairly representative middle western city who handles one of the better known makes of tractor. In the course of our discussion I asked some questions relative to the various elements that went to make up the long life, efficiency and low operating cost of the machine as a whole.

I listened to some very good sales talk upon the plowing depth, the horse replacement, the comparative upkeep cost. These were generalities and figures that the farmer reads every day in his farm publications and in tractor catalogues.

I appreciate that these are facts that talk in terms of dollars and cents to the farmer. But in these days of intensive and educational advertising by parts makers that same farmer is asking, why? Why is it that one make of tractor has a lower fuel cost per acre; why will there be less breakage and repair costs? And these questions are being asked more and more every day by the boys from the agricultural colleges who are returning to the farms educated to the use of machinery on the farm and with a certain mechanical knowledge of good and bad elements in design and materials. A far greater number of boys have come back from their military training with an education in mechanical efficiency and they are all asking the dealer—why?

Being directly interested in transmissions and gearing my inquiries of the dealer naturally followed this line. The questions were not at all technical and were such as might be asked by any farmer who reads his trade papers. They had to do with the gear materials, whether castings, forgings, alloy steels and hardening. These are subjects discussed every day in the advertising of gear manufacturers just as similar subjects on other accessories are discussed by their makers. Beyond the incomplete descriptions given in the catalogues the dealer was unable to offer any comment.

Of course, I do not mean to intimate that the farmer is asking college-bred questions nor that the dealer must have a technical education. But, to my mind, the solution was suggested by my further investigations with the thought that perhaps I had met up with a particularly disinterested dealer, so I tried a number of others and found that the best informed were those who were direct factory representatives. Having had factory contact naturally these had more of a manufacturing experience, and it seemed to me to be a very pertinent fact that they had the appearance of being the most successful dealers in their various districts. Of course, it is not practical to give every dealer and salesman a factory course. But it is possible to give him the benefit of educational talks of sales conferences or by sending him each month or oftener a suggested selling talk based upon some special feature of the machine.

Parts manufacturers are always ready to co-operate in plans of this sort. Many of them will have representatives address dealer conferences in a semi-technical way or will suggest the text matter of educational mailing articles. This is a service at the command of tractor manufacturers.

But the dealer must not wait for such knowledge and information. Competition is keen and he cannot afford to neglect any opportunity of broadening his knowledge of his machine and especially of competing machines. He knows the questions his prospects ask. He can look at the machine from the purchaser's viewpoint and if the manufacturer whom he represents has not or cannot give him a satisfactory answer the recourse of the parts maker is always open to him and any inquiry he makes will be fully answered if the conditions are explained.

INTERNATIONAL TRACTOR TRIALS IN ENGLAND

THE second international trials of agricultural tractors under the auspices of the Society of Motor Manufacturers and Traders, Limited, will take place at Shrawardine, near Shrewsbury, England, from September 20 to 24, 1921. The previous trials held in Lincoln, 1919, were very successful, and the promoters confidently hope that practically all the known makes of British, American and continental tractors will be entered. It may be added that trials will be open to makers of implements as well as of tractors. Mr. Harrison Watson, Canadian Government Trade Commissioner, has forwarded copies of the regulations, entry forms, and maps of the ground and other general information. These are on file at the Department of Trade and Commerce, Ottawa, where they are available for Canadian manufacturers on quoting file No. 27041.

VELIE MAKES ANOTHER REDUCTION

Moline, Ill., July 2nd: Another cut in prices totaling reductions of $400 on leading models, was made on all Velie passenger cars today. The prices are now lower than have ever prevailed before on the present Velie line.

According to Velie Motors Corporation, this cut brings the Velie's larger five-passenger Model 48 to $1585.00.

The total cut on the smaller Six Model 34 is $200, bringing the price down to $1385.00.

New prices on other styles are as follows: Model 48 sedan $2485, Model 48 speedster $1800, Model 48 seven-passenger $1950, Model 34 sedan $2085, Model 34 roadster $1385. All models are regularly equipped with cord tires.

F. E. Bradfield, Vice President of Velie Motors Corporation, stated to-day that the factory has been running strong every month of this year and that production has been near the peak for sometime. In view of the latest price reductions preparations have begun for a greatly increased output.

"Business on established cars never had a finer outlook", said Mr. Bradfield. "So far as we are concerned our problem is how to keep production at such a point that we will not be oversold within the next few weeks. In this reduction in price we are cheerfully complying with the spirit of the times. We have already rigidly maintained quality as a foremost consideration and always will, and it is a fact that the volume of business done on quality rather than price is increasing at an astonishing rate."

Sir John Willison, chairman of the Canadian Reconstruction Association, and Dr. E. P. Doolittle, president of the Canadian Automobile Association, have been selected by Willys-Overland Ltd., as the judges in the $5,000 letter-writing contest, "What my car means to me."

Billmont and Walden

Worcester Wrenches and Wrench Sets

We specialize in Tools and Garage Equipment for the Garage Man.

The Well equipped Garage has a big lead over other competitors.

KEYES SUPPLY CO., Limited
282 SPARKS STREET,
Phone Queen 880 OTTAWA
(Private branch exchange to all departments)

Why you should sell "Spedolene"

Any really good lubricant forms a buffer that prevents wear and tear on gears and bushings.
"Spedolene does more."

Its asbestos content forms a perfect cushion between working parts, holds the lubricant longer and permits no heat to be transmitted.
"It is the only lubricant that does."

It is a lubricant that is equally effective all year round, ensuring you of steady sales, and, is the easiest lubricant to sell the second time.
"Motorists swear by it."

"Made in Canada"

In all due justice to yourself and your customers you should at least investigate these claims and give "Spedolene" and the service it will render a chance to work itself into the niche in ***your*** high esteem that it now enjoys from others.

"Write Us About This Proposition."

Manufactured Solely by
Spedolene Refining & Manufacturing Co.
LIMITED
MONTREAL

SAF-T-VISOR

ANNOUNCEMENT is made by The Toledo Wood Products Company of a new adjustable windshield visor of the non-breakable type, made under the trade name of Saf-T-Visor, that will, it is claimed, fit the windshield of any automobile manufactured, including coupes, sedans, touring cars, roadsters, etc.

Saf-T-Visor consists of a carefully finished piece of seasoned wood, with metal fittings. It is heavily enamelled in black on the exposed upper side and in dark green on the under side. It is especially light weight, the makers say, and of great tensile strength. It is claimed that Saf-T-Visor is rattle-proof; instantly adjustable to any desired angle from the seat; has no sight obstructing side brackets or braces; that rain drip is led to the sides by special construction; that it is easily and quickly attached or removed by anyone and that installation will not damage the car; that it does not interfere with windshield or auto top adjustments in any way. All fittings re enamelled.

STORAGE BATTERY DISCHARGE SET

THE INSTRUMENT panel of this set is of slate mounted on iron standards. The meters are of the milli-volt type with shunts mounted on the back of the panel, operated through double throw switches. Voltmeter has special calibration for cadmium testing. Cadmium test leads are furnished. A carbon load rheostat is mounted on the back of the panel in which heavy current discharges may be absorbed, the rate of discharge, it is stated, being controlled through the compression screw on the front of the panel.

Five sockets are provided for the reception of plug terminals on the test leads which are furnished. With test leads connected in the two lower sockets, the makers claim a convenient means is provided for low rate discharge for battery plate forming.

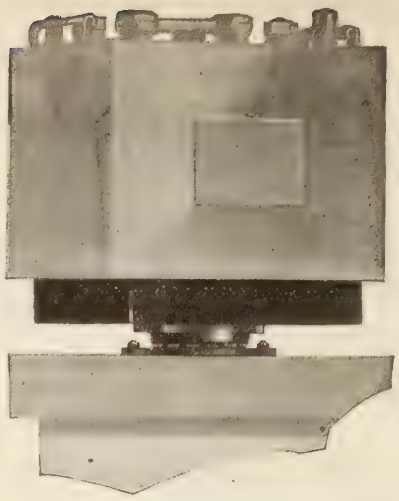
Any rate of discharge, the makers say, is provided and controlled by the compression screw through the carbon rheostat. Made by Joseph Weidenhoff, Chicago.

VIBRA AUTOMATIC OIL CUPS

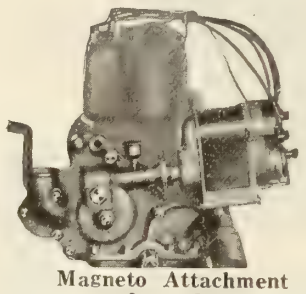
THIS oil cup utilizes the natural forces or vibrations of automobiles or machinery as a medium of operation. A valve at the bottom of the oil outlet is controlled by an inverted oscillating pendulum. The oscillations of the pendulum open the valve, feeding the oil in graduated amounts until the automobile stops and the vibrations cease. The pendulum then remains stationary in central position, thus closing the valve and retaining the oil in the cups until the machine is again in motion. The capacity of the cups is one-half ounce of oil, which the makers say, will lubricate automobile or truck steering knuckle king pins, spring shackle bolts, etc., from three to five hundred miles. They are made by the Vibra Engineering Co.

EUREKA DEMOUNTABLE BATTERY

THIS BATTERY is so constructed that only a screw driver and pliers are required in disassembling and assembling it. No compound is used to seal the cell covers, the connectors are held on by nuts, and the terminals are screwed on. The makers claim that the entire operation of dismantling and assembling requires less than twenty minutes by an inexperienced person. The battery case is a one-piece container. Made by the Storage Battery and Appliance Corporation.

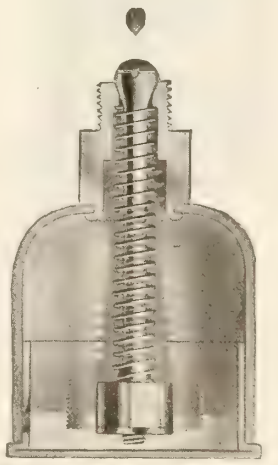


Battery Turntable



Magneto Attachment for ords

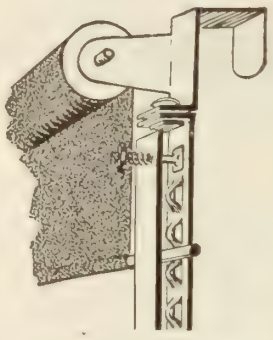
K-M Windshield Cleaner



Automatic Oil Cup

Bead Cutter

Nojak



Another View of Kennedy Windshield Vision Shade

Eureka Demountable Battery

K-M WINDSHIELD CLEANER

ANNOUNCEMENT is made by the K-M Manufacturing Company of a type of mechanical windshield cleaner, which, they claim, will fit any type of windshield on any car manufactured in any desired position. Interchangeable wipers of three distinct types—rubber, felt, and spring-brass, are provided.

The spring-brass wiper is designed for use on the outside glass, the thin spring blades cutting in the direction of movement. Owing to its construction it is claimed it gets under and removes ice, sleet and frost instead of merely dragging over such obstructions. The spring-brass blade wiper is used in combination with a felt wiper on the inside of the glass. Where felt only is desired an especially thick felt pad is made for the outside of the glass, and is used in combination with a thinner felt wiper for the inside. The felt wipers are chemically treated to cause the rain to run off and leave the glass clear during a storm. The rubber wiper can be used in combination with the felt wiper in any desired combination, or rubber wipers can be provided for both sides of the glass.

DIXIE VALVE FACING TOOL

THIS TOOL faces valves and tests the accuracy of new valves. A micrometer adjustment on the feed screw enables the repairman, it is claimed, to measure exactly the amount he wishes to cut from the valve face. After the valve has been placed in the tool, the desired depth of cut is set off on the micrometer scale. The whole tool is then revolved in a clock-wise direction around the valve. As the tool turns, the blade cuts the amount set.

It is also claimed the micrometer enables the operator, after facing a valve, to compute the equalizing adjustment necessary on the cam end of the valve stem. The makers state, by adding the amount cut from the valve face to the amount cut from the valve seat, the operator arrives at the adjustment necessary for setting the valve. Manufactured for the Southern Machine and Tool Company.

MAGNETO ATTACHMENT FOR FORDS

THE Magneto Attachment Co. are manufacturing an attachment which makes it possible to install any standard four-cylinder magneto on any year Ford car. It permits installation without interfering with the starting or lighting units. The makers say it will also fit all right-hand drive cars. Once installed, it is claimed, it forms a vital part of the motor. A rigid gray iron casting replaces the original tining gear cover. The drive is obtained from the camshaft through a pair of steel spiral gears, which are heat treated. A long bronze bushing carries the driving shaft, which ends in a specially designed coupling which allows variable timing adjustment. Lubrication is taken care of by the present splash system in the motor and by a grease cup which is fitted on the top of the attachment.. No special tools are required for installation.

NOJAK

THIS DEVICE eliminates the use of an ordinary jack in raising a car when changing tires. It consists of a steel casting weighing about six pounds and is attached to the wheels by means of bolts passing through two holes bored in the felloe. After it is attached the car is driven a few feet forward or backward, until the wheel rises up on the Nojak. The makers claim it holds the wheel rigid while the tire is changed and may also be used as a spare tire guard and a mud or sand hook. It is made in sizes to fit all cars. Manufactured by the Commercial Manufacturing Company.

"ARMOROID" TIRE RELINERS

A PUNCTURE proof device known as "Armoroid" has been on the market for some years, but the manufacturers have recently made some changes in the construction and with the introduction of new features claim to have greatly improved this device. Armoroid is stated to not only prevent punctures, but also to reinforce the inside fabric of the lining so that the mileage of the tire is increased. Armoroids are built of four layers of gum fabric separated by layers of metal discs, which are specially treated, allowing the rubber to be vulcanized to them, so that they are held permanently in position, thus preventing heat and friction. They fit closely into a tire, being built circular to the exact inside dimensions, and after the tire is worn out they can easily be taken out and put in a new one. They are manufactured by the Armoroid Co., Toronto.

PERFEX RADIATOR FOR FORDS

THE Perfex Radiator Company recently put on the market a new radiator for Ford cars, one of the outstanding features of which is the core. This core has 6 tubes, each of which is live and circulates water. The tubes are made of a special bronze material of .005 inch thickness. This material, it is claimed, is not affected by alkali or lime water as quickly as is brass or copper. The tanks are seamless drawn of 18 gauge material. The lower tank is reinforced with a 14 gauge plate at each end to which the spring bracket is bolted. The hose connections are of seamless drawn tubing. A spring bracket suspension is provided. The spring bracket, the makers claim, eliminates the possibility of any strain being placed on the core or the ends of the tanks.

PORTABLE IGNITION TESTER

ALL THE devices needed for a thorough inspection of all makes of coils, magnetos, condensers and spark plugs, it is claimed, have been brought together in this portable ignition tester.

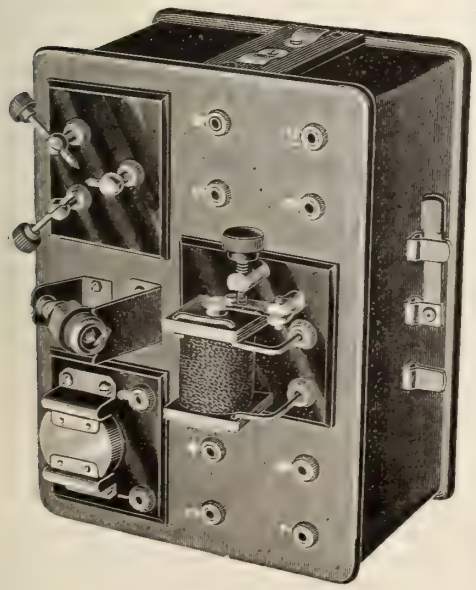
Insulation of spark plugs and high tension conductors may be subjected to breakdown tests. Coils and magnetos may be tested for open and short circuits.

A special attachment is provided for testing and adjusting Ford coil units. All connections are self-contained and made automatically.

A high grade spark coil is mounted within the ignition tester case. A low resistance master vibrator with a hammer break and standard condenser are mounted on top of case and flexibly connected for various uses.

Conductors are provided with clips and plugs which serve for connectors.

High tension current may be taken from a pair of leads for independent testing of distributor caps and various other forms of insulation. Made by Joseph Weidenhoff.

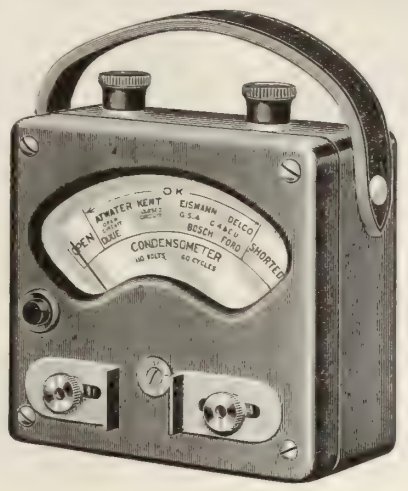


Portable Ignition Testers

CONDENSER METER

THE WEIDENHOFF condenser meter manufactured by Joseph Weidenhoff, Chicago, is a new instrument developed to meet the demand for a low priced device to check condensers. It will tell instantly, it is claimed, whether a condenser is open or short circuited and whether it is of the proper capacity for the ignition system.

To operate, connect 110 volts alternating current to the binding posts on



Condenser Meter.

the top of the instrument. Then connect the condenser to the clips on the front of the instrument, or place it between these clips and press the button. The pointer will indicate on the scale the condition of the condenser and if it is neither open or short circuited it will indicate for what system the condenser is suitable.

MIRRORSCOPE PARKING LIGHT

THIS PARKING LIGHT is mounted on the left front fender and lighted when the car is parked. The makers claim it serves as a mirrorscope, rear signal and front light.

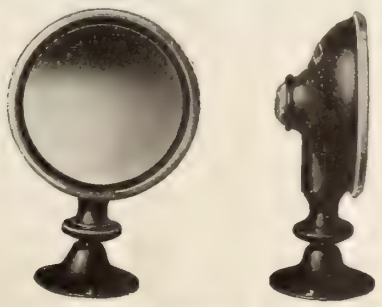
The mirrorscope is adjustable so as to enable the driver to see the road behind him.

The rear signal consists of an illuminated red circle around the circumference of the mirrorscope.

The front light is supplied by a white jewel.

The makers say it is substantially constructed and that there are no wires visible or exposed. A contact in the universal ball and socket joint makes the lamp independent of the bracket as far as wires are concerned and permits its removal without interference with the electrical connections. Made by the Alexander Mirrorscope Company.

H. C. Dart, advertising manager of the Paige-Detroit Motor Car Company resigned recently and has been succeeded by W. K. Towers, formerly of the advertising division of the Reo Motor Car Co., Lansing.



irrorscope Parking Light.

Getting the Most out of Power

EXCELLENCE 2-PIECE PISTON RING

ExcellencE Piston Rings make motorists happy because of the added power they give every car in which they are used.

ExcellencE Piston Rings keep tight up against the cylinder walls. They expand both ways. They fit under any condition of piston and cylinder. Every ounce of power is delivered against the cylinder head.

No gas can get by ExcellencE Rings—no compression is lost. They never break when putting on.

"The only perfect piston ring"

Sell ExcellencE Piston Rings to your customers.

LAMONTAGNE LIMITED

Wholesale Dealers in Automotive Equipment

QUEBEC MONTREAL WINNIPEG

Saskatchewan Dealers Convention

THE following report was read before the Implement Trade Section of the Saskatchewan R.M.A. convention held at Saskatoon recently. The report was read by H. T. Pizzey, Secretary of the Implement and Automotive Trade Sections:

Mr. Chairman and Gentlemen:—

It is encouraging to notice the number of dealers present at this meeting, because this is the time of the year when they should be digging up prospects for haying and harvesting machinery. It was not intended in the first place to arrange for a section meeting during the convention because your provincial committee were of the opinion that a convention of the trade can best be held either in December or January of each year, that being the time when it is possible for all dealers to get out. However, as there would be a number of dealers attending the convention in any case, it was deemed advisable to hold a meeting of those dealers attending in case some of those present might not be able to attend the First Annual Convention of the Implement Trade Section which will be held as this meeting sees fit.

As the convention of the Automotive Section is to be held in January, the 26th., and 27th., of each year, it might be advisable to hold our convention either on the two days before or after so that any dealer handling both Implements and Automobiles, (as a large number do), could attend both conventions without making two trips. This matter will come up for consideration later on.

A number of resolutions were passed at last year's meeting, a report on which will be given later. The convention saw fit to appoint as their committee, George Matheson, of Craik, W. J. Keller of Shaunavon, Hugh Rorison of Moose Jaw, H. E. Hamilton of Unity and W. A. Harvey of Macoun. During the year Mr. Matheson went out of business and therefore was not any longer eligible for office. It will therefore be necesary for you to appoint another from among you to act until the convention is held, when the new committee will be appointed.

The present committee have rendered very valuable assistance at all times when called on to deal with any matter, Mr. Keller having devoted considerable of his time, which he could well have given his business.

Membership Increasing

I have to report that since last June the membership of the two trade sections increased from 343 to 506 on the 31st of December and is still steadily increasing.

During the year owing to shortage of funds, your secretary had to give over half of his time to other association matters, and consequently the time that might have been given to matters pertaining to the Implement and Automotive Trade Sections, was devoted to other work. However, this has now been remedied and in future the secretary will be wholly at the disposal of these two sections.

Accounting Systems

A number of accounting systems have been installed during the past year, all of which have proven satisfactory and we are at present at work producing a system to apply exclusively to the implement trade. The rough draf of this has been completed and it will be ready for distribution before the end of the year. Mr. Keller has rendered sterling service in this connection. No other association has completed such a system as we expect to have and a large amount of study and work has been necessary.

On Good Terms With Manufacturers

We are on amicable terms with all manufacturers and wholesalers and the Provincial Government. Our thanks are due the press and trade papers for the valuable assistance rendered in giving the publicity which they have to the efforts of the dealers for the betterment of conditions.

Special credit must be given to our organizers, Mr. Anderson and Mr. McQuarrie for their untiring efforts to enrol new members, with what result the membership shows. All services which the association has been rendering in the past have been considerably improved during the past year, until it is our belief that no field of retail merchandising has been left uncovered.

Sales Tax Criticised

Getting down to the actual work of the trade section since last convention, the first item of note is the meeting which took place between the provincial executive and the government on the day following the close of our convention last year. This meeting was held in connection with the one per cent sales tax imposed by the budget and passed on to the retail dealer by the wholesalers—the retailer not being in a position to pass it to the consumer as the Farm Implement Act was thought to prohibit this. The following is a report of the meeting:—

Those present:— S. D. McMicken Moose Jaw, Sask; S. E. Fawcett, Saskatoon, Sask; G. Garfield Wray, Regina, Sask; F. E. Raymond, (Provincial Secretary) Saskatoon, Sask; H. T. Pizzey, (Secretary, Implement and Auto Trade Section) Saskatoon, Sask; G. W. Matheson,Craik, Sask; W. J. Keller, Shaunavon; W. L. McQuarrie, Saskatoon, Sask; G. W. Anderson, Regina, Sask; F. A. Holden, Secretary, District Branch, Kerrobert, Sask; D. S. Saunders, Secretary District Branch, Assiniboia, Sask.

The meeting was arranged in the interests of the retail implement dealers of the province for whom Mr. Matheson of Craik spoke. Mr. Matheson pointed out to the Government that under the present provincial legislation the dealers would have to absorb the 1% Sales Tax inasmuch as they were not permitted to raise the retail price as listed with the Government by the manufacturers and wholesalers doing business in the province, as required under the Farm Implement Act.

Mr. Matheson further pointed out to the Government the hardship this would bring about on the retail implement dealers of the province stating that the present margins allowed to them ranged from 8% to 13% of the retail sales price and therefore the absorption of this tax would mean a loss of 10% of their gross earnings. A member of the Cabinet asked if it was not possible to have new lists filed and Secretary Pizzey stated that the manufacturers had no intention of doing so at the present time. The Government were quite sympathetic but pointed out that the Farm Implement Act did not control the retail price of implements but only repairs therefore.

The feeling of the Government was that the implement dealers would be justified in adding the tax to the listed retail price of the repairs.

It has since transpired that where the dealer purchases outright the price is not controlled by the Farm Implement Act, either for machinery or repairs. Further, all companies have informed us that the retail lists provided contain only suggested retail prices and the reason for issuing them is to obtain some uniformity in prices. Most contracts provide for the collecting of the transportation charges over the list prices, although this is not exercised by the dealers. The Farm Implement Act is undergoing rigid investigation by the provincial office and the association solicitors, and we believe a number of amendments will have to be made to the Act as the results of our investigation. Certain phases of the Act will come up for discussion later on.

Dealing with the resolutions passed at the last convention, the resolution regarding "uniform contracts" was brought to the attention of all members of the Provincial Government and given consideration by them but no action taken as the Premier considered such action not within their powers.

However, we have engaged F. M. Anderson of Regina to draw up a contract which will give the same conditions and warranties as the dealer is required by the Farm Implement Act to give, to the purchaser.

The resolution dealing with the co-operation of other provincial boards in the matter of organizers, was also forwarded to the various secretaries and the Dominion secretary and the efforts were redoubled along this line with varying success. Alberta has made very fair progress in this direction.

The third and most important resolution dealing with the margins allowed the dealers, was read and acted upon, a copy being sent to all branch houses, manufacturers and to the Premier and has been closely followed up during the year. The result is shown in the increase allowed in this year's margins. This increase ranging between 1½ and 2½ per cent means that a dealer with a turnover of $30,000 would obtain up to $600 and more in some cases, for selling the same amount of goods this year than last.

MONTREAL AUTO TRADE BANQUET

THE annual banquet of the Montreal Automobile Trade Association was held June 8 at the Claridge Hotel, Bleury street. Four hundred members and friends of the association were present.

In introducing the speaker of the evening, Charles E. Coe, eastern sales manager of Franklin Automobile Co., of Syracuse, N. Y., C. S. Hoban, president of the association, complimented the members and shareholders upon the numerous and enthusiastic attendance. Mr. Hoban sketched briefly the history of the association from the date of its formation in 1913.

Charles E. Coe congratulated the association on the spirit manifested by the numerous turnout. If this spirit could be made to crystallize into universal co-operative action, he felt certain that the association would succeed beyond its wildest dreams.

The war had proved to the world that the automobile was a utility, said Mr. Coe. From the time of Christ to that of Lincoln, there had been little improvement in means of transportation; for two thousand years there had been a need which the automobile had at last filled. The automobile industry was the third largest in the world, and the speaker voiced the opinion that unless the railroad service showed improvement in the near future, there was a good chance that the automobile industry would rank first.

The unparalleled development of this industry, during and after the war, had opened up new channels of service, and had given birth to new responsibilities. It was now incumbent upon the dealers to organize so as to meet these responsibilities. Mr. Coe spoke of the organization of the National Automobile Association of the United States, which represented the needs of the dealers, and also conducts educative work of great importance in bringing legislators and laymen to realize the importance of the industry. The high taxes imposed by the American Congress on automobiles, was referred to by Mr. Coe. He appealed to his hearers to get together and organize their branch of the industry, saying it was the least protected branch. Through co-operation and education the dealers would be able to put their business upon the high plane it merited.

Mr. Coe said that the day was passing when the automobile could be called a purely pleasure vehicle, and referred to the great service rendered by the industry during the war. He also spoke of the necessity of new sales methods to meet changing conditions, and referred to the great value of service after the car had been sold.

Those at the head table were: C. S. Hoban, president of the Montreal Automobile Trade Association; Alderman L. Rubenstein; J. R. Marlow, former president of the M.A.T.A.; A. E. Gadbois, director of the M.A.T.A.; Charles E. Coe, J. Ernest Millen, former president M.A.T.A.; J. A. Belanger, principal of the Technical School, George Bergeron, vice-president of the M.A.T.A.; J. Duchastel de Montrouge, president Automobile Club of Canada; George A. McNamee, secretary-treasurer Automobile Club, of Canada.

MOTOR TRANSPORT AND TRACTION FOR SOUTH AFRICAN FARMERS

A FACTOR in the development of the farming industry of S. Africa is the question of transport, states the report of the Land and Agricultural bank of South Africa for the year 1920. Taken as a whole, the railways serve the purpose of main arteries, but there should be feeders whereby farmers can be brought into easy contact with the railway. The state of the country, both financially and geographically, does not in many instances justify the construction of new railways, but there is no reason why the making of good roads and the building of bridges over drifts frequently impassable in summer should not receive more attention. It is not much use for the farmer to raise crops if his work is to be lost owing to lack of transport facilities.

Motor traction is of great importance to the farmer, both in the transport of his produce and in the tilling of his soil. From the earliest times the South African farmer has relied almost entirely on the ox for all heavy tractive purposes. Where large stock thrive and grass is available, the ox provides a cheap form of transport, but the farmer who breeds cattle does not usually do much cultivation, so that motor traction does not make a strong appeal to him.

The agriculturist, however, is always faced with the difficulty of finishing his ploughing at the most opportune time; and if his produce is of a perishable nature, quick transport to the railhead is of pressing importance. Mechanical traction should also appeal to him, but he is chary of adopting it because of the initial cost of tractors, the high cost and difficulty of obtaining fuel, and the cost of spares.

PREDICTS AUTOMOBILE WILL DISTILL OWN FUEL

A PREDICTION that automobiles within a few years would carry individual stills to produce fuel for their operations was made recently by Thomas A. Edison, jr., in an address at Boston. He declared he had himself been seeking a substitute for gasoline for ten years. The problem would be solved, he said, by the manufacture of individual distilleries to be attached to cars, the stills to be operated by the heat and motion of the motor, and to produce from petroleum and other ingredients a combustible mixture supplied as constantly as current is generated by electric cars while in motion. A car of average power in his opinion, could be equipped to produce sufficient fuel to run itself and enough by-products to pay for its maintenance.

SASKATCHEWAN

LUSELAND: — Danielson Brothers have opened a machine shop here and are equipped to handle all kinds of tractor and implement repairs and blacksmithing.

"After-Harvest" Sales are Waiting

THESE are busy days for the implement dealer. The immediate demands of harvest—setting up and delivering harvesting machines; providing customers with emergency repairs for old machines; adjusting and putting in order various implements in the field; selling binder twine—these and many other details incidental to the annual harvest rush, in localities favored by good crops, are monopolizing the dealer's time, energy and attention.

No dealer should be too busy, however, to give proper consideration to "after-harvest" sales. For instance, there are many profitable sales waiting for *Case Dealers* for such equipment as *Case Silo Fillers, Case Baling Presses, Case Kerosene Tractors, Grand Detour Power Plows, Grand Detour Tandem Disk Harrows* and, in some sections, *Case Road Building Machinery*. Sales of such machines and implements represent attractive volume, a clean profit, and real satisfaction to the purchaser. Case high standards of manufacture and service are selling assets that every Case dealer should recognize and capitalize on.

Now is the time to line up and *close* prospects for "after-harvest" equipment. Let us co-operate with you.

THE CASE LINE

Power Farming Machinery
Kerosene Tractors—3 Sizes
Steam Tractors—4 Sizes
Threshing Machines—7 Sizes
Silo Fillers—4 Sizes
Baling Presses—2 Sizes

Grand Detour
Mouldboard Plows—5 Sizes
Disk Plows—3 Sizes
Disk Harrows—5 Sizes

Case Road-Building Machinery
Steam Road Rollers—2 Sizes
Rock Crushers—2 Sizes
Rock Bin with Screen—15-Ton
Road Graders—3 Sizes
Road Drags—3 Sizes
Road Rooter—275 lbs.
Road Sprinkler—12 bbls.

Case "Six" Automobiles
Touring
Sport
Coupe
Sedan

J. I. Case Threshing Machine Company
Dept. G215 Racine, Wisconsin

Factory Branches
Alta., Calgary—Edmonton
Sask., Regina—Saskatoon
Man., Winnipeg—Brandon
Ont., Toronto

CASE
TRADE MARKS REG. U.S. PAT. OFF. AND IN FOREIGN COUNTRIES
POWER FARMING MACHINERY

NOTE: We want the public to know that our plows and harrows are not the Case plows and harrows made by the J. I. Case Plow Works Co.

Your Money Back - Plus Profits

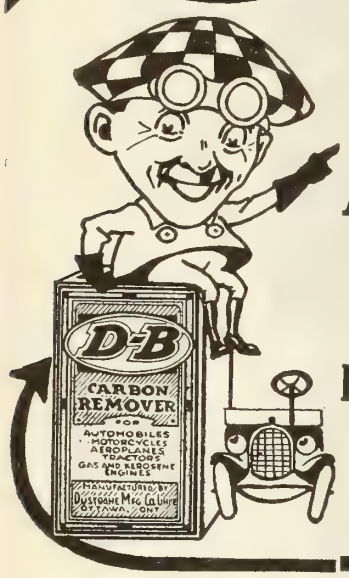
You pass out D. B. Carbon Remover to your customers, hand it out wholesale, by the can-full.

"Try it," you say. "If it is not satisfactory in every way, return it to me. The trial does not cost you a cent."

If your customer returns the can to you, WE WILL PAY YOU THE FULL RETAIL PRICE FOR IT—not the price that you pay us—the RETAIL PRICE, with your profit figured in. We become your customers. We know that the average dealer is honest and we know that

D-B CARBON REMOVER

is right. We back them both to the limit.

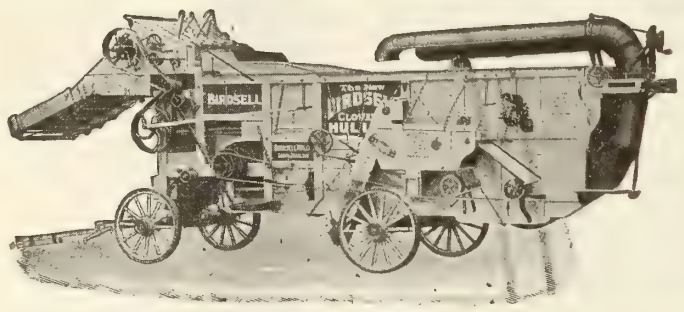


Auto Jack Says:

"Looks as though we're pretty sure of our product. And so we are!"

Dustbane Mfg. Co., Limited,

OTTAWA, ONT.



BIRDSELL CLOVER HULLERS

65 YEARS IN THE FIELD

In these days of high costs you must get RELIABLE GOODS for money spent or your WASTE will consume all of your profit.

There was never a time when "QUALITY" has been in such demand. In Quality and Honestly constructed goods lies the hope of industry today. Buy wisely and you will have economy.

BIRDSELL HULLERS have years of experience behind them. They are not an experiment. They are built well and will last a life-time.

They hull and clean Red Clover, Mammoth Clover, Alsike and Sweet Clover seed.

BUILT IN THREE SIZES FOR CANADA

Birdsell Manufacturing Co. Foot of George St.

Toronto, Canada

RUBBER BLOCK TRACKS FOR THE CLETRAC

THE increasing use of tractors for industrial haulage, particularly in warehouses and plants, where grouters and lugs would injure the floor, has led Cleveland Tractor Co. to the design of a new track for the Cletrac, which, the makers say, embodies the best known principles of solid truck tire building.

Each shoe of the track assembly is made up of two units—first, a solid block of rubber, especially compounded for severe service, which is vulcanized to a section of standard truck tire channels, and second, a track shoe so designed that the rubber block and channel section is bolted to it securely.

The two bolts are keyed into the channel and vulcanized in place when the rubber block is put on. This construction permits the replacement of the tread without replacing the track itself. The rubber block extends a full one and one-quarter inch above the tire channels, thus greatly increasing the life of the tread and reducing the maintenance expense.

Each block has a floor contact surface of 3x6 inches, so that the actual pressure of the tractor is not more than fourteen pounds per square inch.

CONTINENTAL CAR CO.

THE Continental Car Co., of America Louisville, Ky., manufacturers of truck bodies has just added $600,000.00 to its capital, which now gives this company $1,000,000 working capital.

The capital has been increased to provide extensive improvements to its plant. New dry kilns have been built, a progressive system of manufacture provided, modern dust proof dry kilns have been added to the paint department. This company also builds industrial cars.

Geo. H. Stebbins from Ford's River Rouge plant has been appointed factory superintendent of the Continental Car Co. Mr. Stebbins has applied Ford methods to the manufacture of truck bodies.

Walter C. Martin, formerly Cadillac dealer in New York City, has been appointed general sales manager of the Continental Car Co.

Irving Miller has just been elected secretary of the Continental Car Co. Mr. Miller entered the employment of this company as a stenographer several years ago, and has gradually worked up to this important position.

THIS MAY HELP YOU SELL LIGHT PLANTS

Having read several articles about light plants in an agricultural paper, a farmer writes to the paper to tell of his experience. He says:

"To say that my plant is giving satisfaction is putting it mildly. If more people realized the convenience and safety from fire, electric plants would soon be as numerous as automobiles.

"My plant is a direct-connected 32-volt, the generator is a 42-volt, 40 ampere, 180 light capacity, equipped with an automatic battery charging regulator. I have the entire plant placed in the basement of the dwelling house. We use 55 lights all told, some 350 feet distant from the plant. We have two barns, dwelling, two hog houses, corn crib, garage, machine shed, and all small outbuildings equipped with lights. We have one 100-watt, three 75-watt and two 50-watt lamps placed about the barnyards and feed floors.

"We also run an electric washer, electric iron, fan, cream separator and fanning mill with electric current When using our plant under full load I charge the batteries once every two weeks in winter, using about three gallons of kerosene for fuel. This plant and other plants in the near neighborhood of the same make have not given the least bit of trouble. I will also state that I only add distilled water to the batteries once every four months, using clean rain water which has been caught in the open in large jars."

THE EVIL OF TRUCK OVERLOADING

ON the subject of overloading of trucks, R. H. Salmons, a member of the National Motor Truck Committee, said recently:—

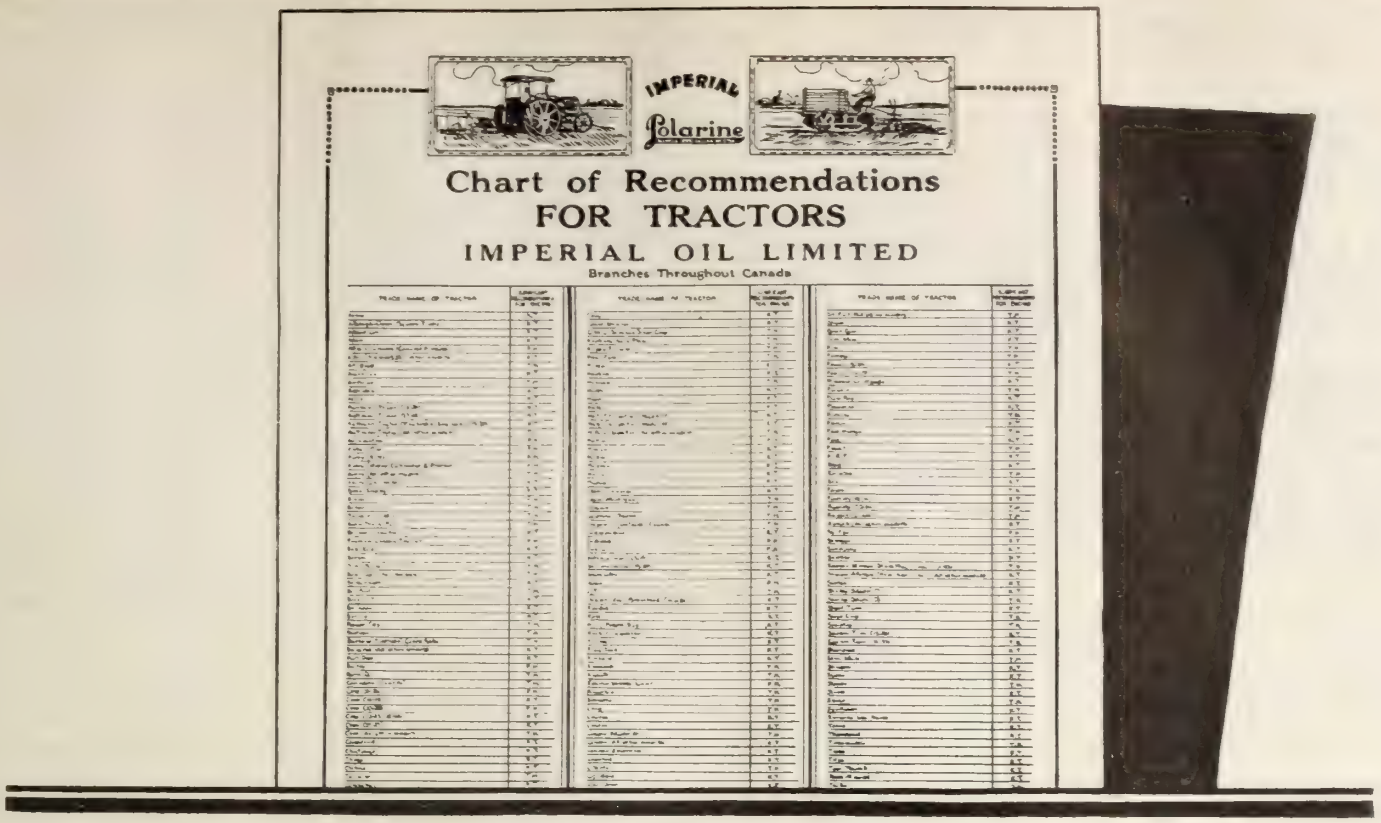
"A truck will stand some overload; the manufacturer refers to this as the factor of safety. It is the designer's idea that this additional strength takes care of the greatest strains the truck may encounter when operated under normal conditions of load and speed. It might better be called a factor of ignorance, for the additional strength of the truck is expected by the owner to support the additional load put on it due to ignorance. Although a machine may be carefully designed and conservatively rated at a certain capacity, with factor of safety, it does not mean that it will carry a 50 per cent. overload without damage to the machine. Because the manufacturer claims the truck will carry 50 or 100 per cent. overload is no reason why the load should be put on the machine. This should be counted as a reserve capacity, and would correspond to the capacity of a horse to pull 50 per cent. or more overload on a grade. The man who drives horses would be foolish to keep them under a strain, such as they would have on the worst part of the road, all of the time. The same principle holds true for a truck.

"A typical example due to overloading resulted in the loss of one-half gallon of oil per day from the oil-pump that drives the hoist. It was proved that the trouble was due to gross overloading, because when a new hoist was installed and only capacity loads were carried there was no further trouble.

"A more serious case caused by overloading was that of a contractor owning two five-ton dump trucks. He had a contract hauling crushed stone. He thought he could make more money hauling eight tons per trip. This he did very nicely until just before he finished the contract. While one of the trucks was descending a mountain with an eight-ton load something broke and the truck ran into a large boulder, was almost completely wrecked and the driver severely injured. The truck then caught fire and burned. The contractor was forced to go out of business because of the accident and he acknowledged that overloading caused it all, not poor material or workmanship.

"Truck abuse, whether it be overloading or anything else, is a grievous offence against business, because it blocks the progress of transportation, which is the life-blood of business. Millions of tons of freight are accumulating in this country every day on account of congested terminals. The task of moving it is too great for railroads: the less than carload shipments are the permanent cargo of the trucks. A system of motor transportation is, therefore, needed to supplement the railroads. It does not require a strike to enable the business man of vision to evaluate the worth of the continuous operation of an adequate transportation system. It is the duty of business to see that overloading and kindred abuses do not interfere with its development."

The Dominion Oxygen Company, Limited, will break ground in mid-July for a new quarter-of-a-million-dollar oxygen plant at Montreal, which will double the company's present capacity. The building will be 100 ft. x 100 ft., and will be a duplicate of the company's Toronto plant, which until now has supplied oxygen to Canadian industrial users through five district distributing stations. The Montreal plant will be the second of five producing plants projected at the time the company was organized last year.



This Chart Sells Imperial Polarine

HIT or miss lubrication is a thing of the past. Tractor owners buy oil to-day on the strength of a reputable manufacturer's recommendations.

Implement dealers who sell Imperial Polarine, according to our Chart of Recommendations are in line for bigger and ever increasing business. They capitalize on every dollar we have spent to make our recommendations a scientific and absolutely reliable guide to correct tractor lubrication.

Display the Imperial Chart of Recommendations prominently. Sell every customer the correct grade of Imperial Polarine. He gets better and longer service from his tractor —you secure his permanent trade in both implements and oils.

No other tractor oil is in such great demand as Imperial Polarine. Every implement dealer serves an unlimited market—every sale he makes nets him a good profit. See the Imperial Oil salesman to-day regarding our profitable dealer agreement.

The Imperial Chart of Recommendations for all types of tractors should be hanging in your windows, or on your walls. Write to 56 Church St., Toronto, for Charts.

IMPERIAL
Polarine

Kerosene Tractor Oil

A dark colored heavy-bodied oil suitable for kerosene and gasoline tractor engines. It protects rubbing surfaces from wear—reduces friction—maintains full compression.

Imperial Polarine Kerosene Tractor Oil Extra Heavy

A dark red-colored rich oil of extra heavy body—specially recommended for kerosene and gasolene tractor engines requiring an unusually heavy oil.

Imperial Polarine "A"

A dark red-colored oil of extra heavy body for air-cooled or water-cooled gasoline or kerosene-burning engines. Especially suitable for kerosene tractors and for motor cycles.

IMPERIAL OIL LIMITED

Power - Heat - Light - Lubrication

BRANCHES IN ALL CITIES

THE STORY OF OIL

THERE are two dramatic romances in the history of the Oil Age. The first of these is the drama of discovery. The fascinating story of the discovery of oil, in the mountains of Pennsylvania, by Drake, who was the first man to introduce modern methods of drilling for oil, is a story itself. It has been written a score of times. It is the biggest industrial romance of two centuries.

But equally fascinating and dramatic is the history of the development of the refining industry.

Petroleum, crude oil, is a complex substance. Basically all crude oil contains the same elements. Basically it analyzes about the same everywhere. But its combinations of elements and their varying proportions make of every distillation a different problem.

From practically all crude oil the same elements are distilled.

These magic products, gasoline, kerosene, fuel oils, lubricating oils, paraffine wax and coke, are extracted, in greater or lesser proportion, from practically all crude oils.

The practical chemistry of petroleum is not taught in colleges. It is as unwritten as the tenets of masonry.

The chemist who starts to work in a distillery must learn from others who have gone before. He can find no text to guide him. His theoretical knowledge stands him in small stead here.

The petroleum chemist learns oil chemistry in the refinery from those who have trod the paths before him.

A refinery, such as those operated by Canadian oil companies, has its pipe lines to the producing oil fields. When a new well is brought in, a pipe line is laid to the well. The oil produced is collected in storage tanks. These are connected with the company's pipe line. When the storage tanks are full, the refinery pipe line draws off that oil to its central gathering oil farm.

An oil farm is a tract of land equipped with massive oil tanks. These storage tanks are usually 55,000 barrel capacity.

This oil collecting system comprises often hundreds of miles of pipe lines, stretching a great network over the countryside where oil is produced.

THERE are three principal types of refineries. The simplest type is what is known to the trade as topping or skimming plant and is used for removing the light hydrocarbons, such as gasoline and kerosene, from petroleum and selling the remainder as fuel oil.

The next type of a refinery is what is known as a lubrication plant. A lubrication plant, starts off, in principle, similar to a topping plant, but carries the process further and cuts down into some of the lubricating oil, removing all of the gasoline and kerosene and some lubricating oils, selling the remainder as fuel oil.

The next type is what is known as the complete refinery. A complete refinery again starts off similar to a topping plant and works up all the crude into gasoline, kerosene, light and heavy lubricating oils, wax, coke and other by-products.

Refining gasoline from crude oil is a separation process and can be likened to the process of skimming cream from milk. Skim the top layer from milk and you have pure cream. Dip a little farther and you get cream and milk. Below this, milk only. If the bottle of milk stands long enough you will have some water in the bottom of the bottle.

Gasoline is the first thing that comes from crude oil in the refining process. A gasoline that is dry, volatile and homogeneous. On this account it starts quickly in the motor.

If, in the process of separation, we dipped a little further, like one would dip farther into a milk bottle for cream, they would get both cream and milk, whereas in gasoline refining we would get coal oil.

When you use a low-grade gasoline in your automobile, here's what happens—when your car stands over night or any length of time, coal oil being heavier than gasoline, the coal oil goes to the bottom of your carburetor and the gasoline stays on top. Result — your car starts hard. This is especially noticeable in cold weather.

Oil scientifically refined starts easily at all times, it can be likened to the "cream" of crude oil. It is a gasoline famous for its volatile homogeneous and uniform high quality, quick starting, smooth acceleration, full power and long mileage.

Crude oil is like a magic purse from which almost anything can be drawn. The chemist puts his hands into the greasy liquid called crude oil, and draws from it scores of magic products. Indeed the range of by-products of crude oil are so numerous, and are being so constantly added to, that it would be almost impossible to catalog them.

TO understand the composition of crude oil it is necessary to use a comparison that will make the explanation clear.

You have noticed a rainbow and how its range of colors blend from one into another with no distinct line demarkation. So it is with crude oil. Its elements blend into one another in such a way that there is no clear line of demarkation between them. This is what makes the refining of oil products a difficult and painstaking operation.

Crude methods of distillation fail to separate the elements thoroughly. In distilling the gasoline many refiners carry over into it a share of kerosene, a little gas oil, some wax, even some of the heavier oils. This improperly refined gasoline gives trouble in your motor. It is the cause of carbon deposit on your cylinders. It acts queerly in very cold or very hot weather, or very dry weather, because of improper methods of distillation.

To produce a gasoline that is 100 per cent. right requires the most careful and painstaking distillation. It is a work of infinite detail. It is possible only under the most continuous of checkings and tests. These tests cover every step of the refining of crude oil into commercial products.

There are tests of every kind. Some of them are so accurate and so careful that they are timed with a stop watch, and their accuracy is a matter of split seconds.

Now to return to the method of scientific refining.

When the crude oil is pumped from the storage tanks at the refinery it is first placed in a great crude oil still. At any good refinery you will find what looks like a battery of gigantic boilers. They are out in the open air. Practically all the processes of refining are done in the open air. These great boiler like tanks rest on a bed of masonry and each is placed over a great furnace fed by oil, natural gas or coal, which generates heat under these stills. In other days, before modern methods had developed the up-to-date science of refining crude oil, they were afraid to put real fire under crude oil. They distilled by using live steam to raise the temperature of the crude oil. Today they are not afraid to use real fire even in the advanced processes of distillation under pressure.

These great stills are filled nearly full of crude oil and the heat is applied. Now remember the analogy to the rainbow. The elements of crude oil are all blended in the crude. The only method of determining when the oil changes character from gasoline to kerosene, and then to gas oil, wax oil, etc., is by testing it, not once in a while, but constantly. The various elements vaporize at different temperatures. As the oil becomes heated the gasoline element which vaporizes at the lowest temperature begins to form bubbles like you see in water beginning to boil. These bubbles form on the bottom plate nearest the fire, but eventually they rise to the surface and as each little bubble comes to the surface it explodes, releasing the vapor, or gas generated by the heat.

TO help activate the action of the development of this gas the bottom of the still has a network of steam pipes through which live steam is driven into the mass of crude oil. This helps to break a way through the heavy crude oil for the gasoline vapor bubbles and helps to drive it out of the still. It also agitates the mass of heavy crude oil. When the top of the still is full of this vapor it forces its way out through the outlet pipes into the condenser.

The condenser is composed of a series of continuous pipes, laid in orderly rows and immersed in cold water. The vapor rises from the still and runs into these condenser pipes, where cold water condenses it into liquid gasoline. The gasoline runs out of the condenser pipes into the tailing house. Here it is tested. The character of the gasoline is determined by Beaume tests. These tests are taken every little while. Here occurs an automatic separation of the gasoline from the steam used as a vehicle to carry the vapor out of the still. The gasoline is then piped out into a receiving tank while the water runs off into water storage ponds.

The tests made in the tail house tell the stillman just where the gasoline is no longer the same, then the valve in the gasoline receiving tank is shut off, and connection is made with the tank which contains the kerosene.

Those Beaume tests are not the only one. On the front of the stills are thermometers which show the temperature of the crude oil in the still. Here, too, tests are made. A slight quantity of the oil in process of distillation is drawn off and is tested. In this way a double check is obtained on what is going on in the still. When the kerosene falls to a certain test the flow is shut off from the kerosene receiving tank and the flow is turned into the gas oil tank. This means constant testing. The tailing house man does nothing but watch the flowing streams of oil as they come from the condensers. As the test changes in each he notes the fact on a chart. He notes the time. He notes the speed of the process.

These tests are checked up with the tests taken from contents in the still by the men in front. This is a delicate and continuous operation. There is never a let-up here day or night, for the stills are never idle save when they are cooled off for cleaning.

When the test of the gas oil has reached a certain specific degree, then its flow into the receiving tank is shut off and the wax oil is drawn off into another receiving tank. All the previous distillates have been white liquids. The wax oil is a yellowish white. The heavier contents of the crude oil are being liberated by the heat, which has now brought the crude oil contents to a high degree of temperature.

Constant tests are made here, too. At last the time comes when the flow of various types of oil has reached a degree of density that only the heaviest contents of the still are left. The still is then shut down and allowed to cool off while the residues are pumped out and the final burning out process converts the remaining residue into coke, a coke which is almost pure carbon.

This is the first process, the distilling of crude oil into its various types of oil.

WHAT has gone before was merely the preamble, it has been the separation of the five principal elements in the crude oil. Let us take the contents of the gasoline tank now and follow it through its processes of perfecting.

The gasoline into the receiving tank is now pumped into what is called an agitator. This is a tall, towerlike structure of steel, resting on a base of either steel or concere. If you look into the base you will see a funnel-like, down-pointing cone, the full size of the tower. In these agitators the gasoline is washed, cleansed and filtered for impurities. When the process is complete, and this means many more tests, the gasoline is then pumped into a steam still. Care has been taken before but it is redoubled now. The steam heats the gasoline slowly and develops the vapor more slowly and evenly. Here the checking tests are made even more rigorously. The tailing house tests are checked with laboratory tests and the gasoline that flows through the tailing house into the receiving tank is as perfect a product as can be made.

In this redistillation the greater volume distilled is gasoline, but a certain amount of kerosene is also recovered, and even a degree of gas oil, wax oil and residue. They are the particles carried over in the vapor bubbles and on the steam in the crude oil still. These other distillates are carried in turn to tanks of their own and the gasoline is ready.

The process of distilling kerosene are somewhat similar. The same care in watching its gravity, the same care in washing and filtration are used; the same redistillations are made.

If kerosene is not pure it cakes on the wick of the burner and smokes. If it does not come to certain tests it does not ignite easily enough and it must not contain gasoline or it will ignite too readily and be dangerous when used in lamps, stoves, etc.

Besides all the gravity tests to which gasoline is subjected we make a flash and fire test on kerosene. The kerosene is heated on a special testing apparatus. This has a thermometer immersed in the kerosene which shows accurately its temperature. This is done by watching the thermometer. When the temperature of the kerosene reaches a certain figure it is tested with a little flame thrower which is swept over the surface. If it ignites there is a trace of gasoline in it and the batch has to be redistilled. If it does not flash then the temperature is raised gradually, making tests every few seconds until the proper temperature is reached when it should flash. If it does the temperature is still further raised to the point where it would ignite when tested by the flame. Both these tests are exceedingly important in getting just the right results from kerosene.

The distillation of lubricating oil and their preparation is a long and intricate process.

This is done by compression at extremely low temperatures. These cause the wax to crystallize and is pressed through great drums covered with heavy canvas, through which the oil is pressed while the crystallizing wax is retained by the meshes of the canvas.

Before this, however, the wax oil has been put through the process of washing and fitering the removed impurities. It is then collected in tanks and separated into soft wax oil. The soft wax is again separated into what is technically known as Foot's Oil and hard wax. The hard wax is put in the congealing pressure drums and crystallized as told in preceding paragraph. Here, too, innumerable tests are made as a whole series of processes are involved before the pure, white, semi-transparent paraffine of commerce is developed. This is then heat-

ed and run into moulds which stand in cold running water and made into candles, the little paraffine waxer that laundresses use, the paraffine your wife uses in protecting preserves, and scores of other uses.

The wax oil, freed from the wax, is then distilled and processed into the different types of lubricants. These run in densities and consistencies from the highly fluid fine lubricants, used in delicate machinery, through various grades of consistency, to the heaviest cylinder oils that are as thick as lard, the kind of oils that are used in gear boxes, transmissions, etc.

YOU have probably noticed how oils of different characters vary in color. The oil is not colored artificially. It develops its own individual color in the processes of distillation and manufacturing. The oils run from a light pale lemon yellow through graduations of orange, red, magenta, and brown to a dark, greenish tinge and a deep brown almost black.

The quality and character of the lubricant is determined by another intricate and exhaustive series of tests. These tests are highly essential. In addition to the various tests mentioned lubricating oils are submitted to fire and flash tests. These are highly important. You must remember, for instance, that the cylinder oils that you use in your car have to stand terrific high temperatures. A letter addressed to the engineers of the leading automobile manufacturers established the fact that the heat in the automobile cylinder at the time of the explosion of gasoline is usually around three thousand degrees Fahrenheit.

This is the heat flash which oil must withstand. In order to make a lubricating oil that will stand such terrific heat it is very necessary that it should be able to withstand the severest flash and fire tests. If it flashed and fired at too low a temperature, it endangers the car and the lives of the occupants.

In making lubricating oils the stop watch test is used. A receptacle is filled with the oil to be tested. This receptacle stands in a water bath. This water bath is raised to a determined temperature. With it the temperature of the oil under test is also raised to that desired temperature. Both water bath and oil are constantly tested for temperatures. When both reach the desired temperatures the oil is released through an opening and the stop watch started.

This is the viscosity test. In order to qualify for a certain quality it must have a certain viscosity test, which is its ability to flow. It must flow out of that receptacle in a certain specified number of seconds. The time is taken accurately, to the split second. It must not vary from the degree established.

If it does not show the right viscosity, that is to say, if it does not flow out of the measured receptacle in a certain specific number of seconds, then it is returned to be worked over until it is right.

ANOTHER test is the color test. Glasses tinted to a certain color are used in this test.

A slide of the glass is inserted into a little box like a kodak camera. On the other side is a glass receptacle to hold the oil. By an adjustment of angles the light projected through the glass and the oil is mirrored on two halves of a reflector. One half of the circle is the color of the test glass, the other half is the color reflected through the oil. These two colors must be absolutely identical. They must not vary by the fraction of the slightest shade.

The flash and fire tests are highly important. The one determines if at high temperatures this lubricant develops any of the lighter distillates. It must not flash below a certain temperature and it must not burn below another determined temperature. These are very delicate tests and are all laboratory tests.

If you will bear in mind the analogy to the rainbow, with its colors blending impalpably from one shade to another, with no clear line of demarkation to indicate the end of one and beginning of another, you will understand the difficulties of the refiner of crude oils in recovering the various products derived from crude oil .

As in the blending of one color of the spectrum, or rainbow, into another color the colors seem to fade into each other, one being gradually eliminated from its mixture with the other through scores of shades so delicately blended that the human eye can hardly tell where one ceases to exist and the other is shown clear and true, so in refining oil the one product shades almost impalpably into another, yet commercially each product must be absolutely isolated. There must be no kerosene in the gasoline and no gasoline in the kerosene. There must be no kerosene in the gas oil and no gasoline. The kerosene and gas oil must be extracted entirely from the lubricating oils and the waxes and there must be no wax in the gas oil or the kerosene or gasoline.

This is a work of exquisite care. It depends firstly on the methods used in refining.

There are series of processes of refining all based on the original method, but differing in detail. Secondly, the perfection of results obtained depends upon the thoroughness with which the work is done. This is perhaps the biggest thing in refining.

The thousands of tests a year made in refining petroleum products are the secret of success in making better products. The tests never cease. The first test is made at the well. The last test is made in the tank car.

NEW J. I. CASE LISTER

THERE is a general effort on the part of implement companies to produce at this time implements that will make it possible for the farmer to produce bigger crops at less cost for production. One of these is a new three-row power lift tractor drawn lister, produced by the J. I. Case Plow Works Company. This lister works a strip nearly 12 feet wide at a time and it is claimed that a forty-acre field can be readily finished up in a day.

A feature that is new and particularly advantageous, the makers claim, is that while this implement works a twelve-foot strip at a time the actual width of the machine is only 8 feet, or very little wider than an ordinary two-row lister. This has been possible, it is said, by placing the wheels, not outside the outer bottoms, but spaced equally between each bottom, the latter being set 3½ feet apart. Another advantage of this manner of setting the wheels is that they run between the ridges, and follow the tractor wheels, which, it is claimed, reduces the draft considerably.

One pull of the rope by the operator from his seat on the tractor engages a dog with deep ratchets on the inside of a large collar which is attached to the wheel of each hub. As the ratchet turns the axle turns and a crank on the inner end of the axle revolves and forces the axle standard to a nearly upright position, raising the bottoms. Another pull of the rope lowers the bottoms. A heavy cushion spring allows the bottoms to go down easily and also assists in raising the bottoms at the end of the furrows.

The bottoms raise 4½ inches at the point when ceased being used in the field, and 5½ inches on the road. The rear raises higher than the point, making it a simple matter to back up. Plowing depth is controlled by levers. Wheels are sturdy and the frame strongly built. An adjustable hitch is furnished so that the lister can be used with any standard tractor.

BURD
Quick Seating
PISTON RINGS

The outer edges—the Quick Seating feature—lap in quickly, producing a seat in perfect harmony with the hard glass-like surface of the cylinder, resulting in maximum efficiency for this type of ring in the minimum time. Seating is accomplished in about one-fifth of the time required for plain surface rings.

One Piece—Easy to Install

The slow, laborious "lapping in" and the annoying delay before the owner can use his car is eliminated. Burd Quick Seating Piston Rings have won the instant approval of mechanics and motorists. Millions of them are in successful operation. The simple Step-Joint gives the minimum opening and prevents leakage.

Sizes up to and including 4 inches, 75c.
Sizes over 4 inches—up to and including 5 inches, 90c.

Burd Ring Sales Co. of Canada
322 McIntyre Building - Winnipeg, Man.

BURD HIGH COMPRESSION RING CO. *Rockford, Ill.*

An Improved Car
—A New Price

AN OPPORTUNITY FOR LIVE DEALERS

The new rock-bottom price of $985 is giving Overland dealers a marked increase in turn-over. We have some good territory still open. Now is the time to secure an agency when people are begining to realize what a wonderful car the New Overland really is.

Prices in Effect, June 1

Touring Car and Roadster	$ 985
Coupe	1495
Four-Door Sedan	1695

F.o.b. Toronto—sales tax extra.

WRITE:
Sales Manager
Willys-Overland Limited
Toronto, Canada

See What this Service Means to You!

We are expert Car-body builders. You take the orders and we will do the work. You will get good profit.

We can produce as fine a car body as you can find anywhere. If the body has been damaged in an accident—we repair it for your customer. If you want the style of the body changed we'll give your customer just exactly what is wanted.

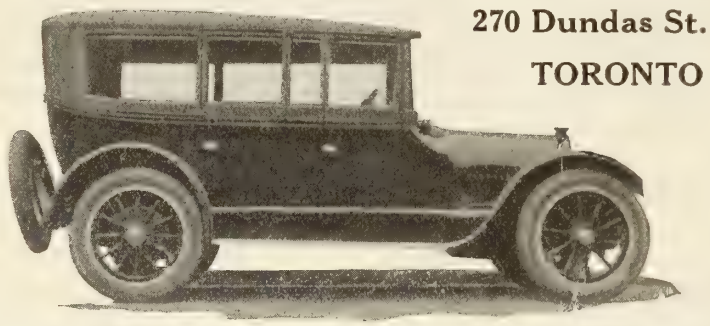
By making use of our service you take advantage of a number of experts: You add to your service a specialty shop to produce high-grade bodies of any type desired by your customers.

"Everything above the Chassis"

Only one man in a locality can make use of our service—it's exclusive. Write today for information regarding our profitable proposition.

AUTO TOP and EQUIPMENT CO., Limited

270 Dundas St. W.
TORONTO



A Sure, Hot Spark

The real joy of motoring is only possible when your car is "hitting on all four." The sure, hot spark of the "M & S" ball-pointed plug will guarantee such performance because the ball point concentrates the current and intensifies the heat.

It is *the plug with the hotter spark.*

The three-in-one terminal of the "M & S" plug is adapted to any style ignition, except Chevrolet; for which we supply a special model ball terminal. The Overland "4" is equipped with our No. 500 ½-inch standard.

Dealers—The "M & S" is the popular Made-in-Canada plug. Ask your jobber for it or write us direct.

RUSSELL GEAR & MACHINE CO., LTD.
1209 King Street, West, Toronto, Ontario

102

The Plug with the Hotter Spark

NEWS — OF THE TRADE FOR THE TRADE

ALBERTA

VEGREVILLE:—A new implement business has been opened by W. H. Ferguson.

LETHBRIDGE: — H. E. Meibach, proprietor of the Ford Garage, is now located at 403-409 Third avenue.

SMOKY LAKE:—Messrs. Leighen and Bereska have opened a garage here. They will handle all kinds of repairs.

RED DEER:—W. Irish has taken over the Mechanical Garage and has secured the services of C. Smart, of Calgary, as head mechanic.

CONSORT:—Holmes and Todd are operating a farm machinery business here. They are handling tractors, implements, cream separators, wagons, etc.

CAMROSE: — Christensen Motors, Ltd., are handling automobiles, repairs and tractors. They have the agency for McLaughlin cars and Samson tractors.

STRATHMORE: — The implement business formerly conducted by J. H. Walls has been taken over by C. W. Oxley, who will continue the I. H. C. agency.

STRATHMORE:—A tractor demonstration was conducted recently by a local dealer on the farm of W. G. Knyvett, two miles north of Strathmore.

BRITISH COLUMBIA

PORT ALBERNI.—P. Whittaker has opened a shop here for automobile painting.

CHILLIWACK:— A. S. Goard Motors Ltd. is a progressive firm dealing in cars, trucks, tractors, tractor implements and accessories. They have a car storage space fifty seven by one hundred and ten feet.

CHILLIWACK:— Lillie's Garage, formerly conducted by T. L. Lillie, has been taken over by Messrs. Greenhow and McCune. The new proprietors have retained the name, Lillie's Garage, and handle automobiles, trucks, batteries, repairs and accessories.

CLOVERDALE.—The Central Garage, recently opened by Messrs. Scott and Lawrence, is 58 x 65 feet, with an addition for the office. It is provided with modern equipment. A ladies' rest room and toilets for both men and women are special features.

VERNON.—George A. Richardson, of Vancouver, and Gordon D. Herbert, of Brandon, Manitoba, have purchased the vulcanizing plant formerly owned by Black and Wynn the business will be conducted under the name of Richardson and Herbert and a general line of vulcanizing, retreading, tire and tube repairing will be handled.

MANITOBA

ELPHINSTONE:—Morton Brothers is a new concern dealing in automobiles, tractors, implements and oils.

LAUDER:—B. Avery has purchased the implement business formerly operated by J. Ramsay.

PORTAGE LA PRAIRIE: — Bray, McGuaig and Harper is the name of a new firm handling tractors exclusively.

MANITONAS:— Johnstone Bros., proprietors of the Pioneer Garage, are conducting a full power farming business. They handle automobiles, repairs, tractors, implements, oil, etc.

M'CREARY:—J. A. Cumming has equipped his tire repair shops with up-to-date machinery to handle all kinds of vulcanizing, including retreading, sectional repairs and tube work.

BENITO:— The Manitoba Garage has recently been equipped with an acetylene, producing plant for making welding gas. The proprietors handle automobiles, tractors, repairs, welding etc.

NEWDALE: — Newdale's first garage is being built by J. A. Cormier, of La Salle. The new building will be 40x72, with plate glass front. Auto tractors and repairs will be handled.

WINNIPEG:—R. McKenzie, manager of the Winnipeg branch of the McLaughlin Motor Company, recently visited the head office and factory of the company at Oshawa.

PORTAGE LA PRAIRIE: — H. E. Weymouth, salesman for the Link Mfg. Co., of Kansas City, has been transferred by that company to Portage la Prairie, where he will act in the capacity of travelling salesman.

BENITO:— Fire recently caused considerable damage to the Dawson garage. Starting in the garage the flames quickly spread to the Benito Hotel adjoining. The damage is estimated at $100,000.

ONTARIO

CHATHAM:—W. H. Snowball has opened a new garage and will handle all kinds of auto repairs, including painting and upholstering.

HARRISTON.—Fire broke out in McLaren's garage recently, destroying the building and equipment, and five automobiles.

LONDON:—A woodworking plant is to be established here to specialize in motor-car and truck bodies. The new organization is capitalized at $100,000.

WOODSTOCK.—The annual plowing match and tractor demonstration under the auspices of the Ontario Plowmen's Association will be held at the Hospital Farm, Woodstock, in October.

TORONTO.—W. H. Barker, formerly sales manager for A. D. Gorrie and Company, has joined forces with Messrs. Keele and Moore Limited, new Ford dealers, King street.

WOODBRIDGE: — Farr Brothers, automobile and farm machinery dealers, have purchased the old Inkerman Hotel, and will convert the ground floor into an up-to-date garage and showroom.

THOROLD:—The Gove Motor Car Company is a new concern which is expected to locate here to manufacture automobiles, trucks and tractors. The new company has asked the council to grant a fixed assessment for ten years at $10,000.

PORT CREDIT.—Plans have been prepared for a large garage on the Hamilton Highway near here, to be known as the Port Credit Community Garage. The new building will cost approximately $60,000, in which a large number of the residents are financially interested.

TORONTO.—G. E. Gooderham and Co., Richmond Street West, Studebaker distributors, announce the appointment of Robert A. Irvine as sales manager. Mr. Irvine was formerly associated with the National Cash Register Company and with the Chevrolet Motor cars, in Toronto.

MASSEY-HARRIS

Binders are known as the best binders to use— a fact which makes them the easiest binders to sell.

Their superior qualities sell them, keep them sold, and help sell others.

The World's Best Binder

You will be the owner of the best binder made when you order a Massey-Harris. It gets crops where others fail and it is built to last.

It saves you money by using less twine on a tightly tied sheaf than any other machine. It is convenient and easy to operate. The controls are within easy reach and the oil holes are readily got at. The reel can instantly be set at any one of 70 different positions by one lever, and the Knotter ties surely and tightly.

Ask your Local Agent to point out the many other features that go to make the Massey-Harris Binder the leader.

MASSEY-HARRIS CO., LIMITED
Established 1847
Head Office: Toronto, Ont. **Agencies Everywhere.**

(Copy of a recent advertisement appearing in farm papers).

Head Office TORONTO

Massey-Harris Co., Limited

Established 1847

"For Your Auto"

GUARANTEE BATTERIES

Merited Home Industry

Canadian Labor Canadian Raw Material
Canadian Owned Canadian Managed
Canadian Dollars at 100% on the Dollar

All Made in Canada

Quick Delivery to Agent or Consumer

They are
Positively and Definitely Guaranteed
without reserve
For Two Years

Factories and Laboratories: ROCKWOOD, ONTARIO, CANADA

Sold by Leading Dealers Throughout Canada

General Sales & Distributing Office: 471 Yonge Street, Toronto, Ontario, Canada

The Auto Battery That Lives

Capitalization $300,000.00

News of the Trade

SASKATCHEWAN

REGINA: — Incorporation is announced of the Regina Vulcanizing Company, Ltd.

DRUMHELLER: — An up-to-date tire and vulcanizing business has been opened here by J. Teasley.

ROCANVILLE: — An automobile and garage business has been opened here by Messrs. Brownlee and Dixon.

INDIAN HEAD:—An automobile, repair and implement business is being conducted here by J. F. Hunt.

QU'APPELLE:—W. J. Craig, automobile and implement dealer, is offering his business for sale.

PERDUE.—A. A. Derby is operating a full line of farm machinery business here.

CARON:—H. A. Lilley has acquired the automobile and implement business formerly conducted by Z. Battel.

SASKATOON:—The eighth annual convention of the Saskatchewan Retail Merchants' Association was held here on June 14, 15 and 16.

BIRCH HILLS:—Swenson Brothers have a fireproof garage and handle automobiles, repairs and farm machinery.

The main offices of the Beeman Tractor Co., have been moved from Minneapolis to the factory at Columbia Heights.

WOLSELEY: — S. Simonson has purchased the implement business formerly conducted by the Magee and Thompson Company. Mr. Simonson has also the agency for Briscoe cars.

REGINA:—Automobile dealers and owners are up in arms over the proposal put forth by the Regina City Council that a civic tax on automobiles kept in the city in addition to the provincial tax, be imposed.

CARNDUFF.—The West-End Garage is a new business opened here recently by C. Lownsbrough, who will handle all kinds of repairs including automobiles, gas engines and farm machinery.

LUSELAND: — A public tractor demonstration was conducted near Luseland recently by Lake and Clark, local automobile, tractor and implement dealers. Plowing, cultivating and discing were performed and careful records kept of the quality and amount of each class of work done, time required and fuel consumed.

Norman F. Dickson, formerly Assistant Secretary of the Hamilton Chamber of Commerce, is now Sales Representative for the Firestone Tire and Rubber Company of Canada, Limited, in Ottawa territory. The Firestone Tire and Rubber Company of Canada, Limited, have their Canadian main office and factory in Hamilton, Canada.

FORD OF CANADA DECLARES DIVIDEND

DIRECTORS of the Ford Motor Co. of Canada, at a meeting on June 7, declared a 15 per cent cash dividend, which will be distributed to stockholders June 15. The company's books closed June 11.

The dividend payment is described as an "annual dividend" by G. M. McGregor, vice-president and general manager of the company. Approximately one year ago, in July, 1920, a distribution of similar amount was made.

The 15 per cent dividend will represent a distribution of $1,050,000 to holders of the outstanding $7,000,000 of capital stock, par value $100.

Price reductions made effective on the product of the Ford Motor Company of Canada are slightly greater than those announced by the Ford Motor Company of Detroit. This is explained as due to the fact that price reductions previously made by the Canadian company were somewhat less than reductions before made by the Detroit company.

Under the new price schedule the Ford Motor Company of Canada cuts $65 from the selling price of touring cars and roadsters, and $110 from the price of coupes and sedans. This would make the sale price of the touring car, without starter, $710.

"Cap'n, suh," explained the unbleached motor-cycle courier who had successfully attempted to navigate a French highway in night traffic, "everything was jest goin' along fine, and den Ah see mah chance to dodge in between two motor-cycles."

"Well, what of it?"

"Dat's all dey was to it, Cap'n suh. Dem two motor-cycles was a truck."—The American Legion Weekly.

MAYBE ADAM LAUGHED AT THESE

"Why do you call your car Regulator?"

"All other cars go by it."—Frivol.

* * *

Optimist—Cheer up, old man. Things aren't as bad as they seem.

Pessimist—No, but they seem so.—Punch.

* * *

Jasper—Scientists are now trying to explain their theories so that the man in the street can understand them.

Gasper (dodging an automobile) — Well, they'll have to hurry up. The man in the street will soon be extinct.

* * *

MacPherson (at the box office) — "Will ye kindly return me the amount I paid for amusement tax?"

Clerk—"Why, sir?"

MacPherson—"We wasna amused."—London Mail.

* * *

"Waiter, I want two boiled eggs."

"Yes, sir. How will you have them, sir?"

"Have them boiled exactly three minutes—no more, and no less."

"Yes, sir. Hard, soft or medium, sir?"

* * *

"There is something desperately mean about motor cars."

"How so?"

"Deacon Brown had his machine out this afternoon and it broke down in front of one of the worst saloons in town."—Boston Transcript.

* * *

Caller—"Is Miss Jones in?"

Servant, "No, madame."

Caller (surprised)—"Where is she?"

Servant—"Don't you know, mum? Miss Jones is going to be married and she goes to the college every afternoon to take lessons in domestic silence."

—Financial News.

* * *

Lady (at fruit stand)—Yes, but aren't these gooseberries rather dirty?

Merchant (sarcastically) — Dirty! Think a bloke can wash 'em and part their 'air in the middle for fourpence a pound these 'ard times?—Bulletin (Sydney).

* * *

Pat—"This is the foist time inny of these corporations have done innything to binnefit the working man."

Mike—"How is that, Pat?"

Pat—"It's this sivin-cint fare. I hev bin walkin' to and from me work and savin' tin cints, and now I kin save fourteen cints."

* * *

An Admiral said at a recent dinner: "There are too many people in our country who can't bear the truth. We must pretend to these people that everything American is perfect. If we criticize it must be criticism as mild as the chicken dealer's.

"'Do you guarantee this hen?' I once asked a Providence chicken dealer.

"'You bet I do, Admiral,' said the man.

"'Has she got no faults—no faults at all?' I asked cautiously.

"'Well, Admiral,' the chicken dealer confessed, 'one fault she has, and there ain't no use denyin' it—she will lay eggs on the Sabbath.'"—Washington Star.

COME TO US FOR SPECIAL SPRINGS

We can produce anything in the way of a spring—"Out-of-the-ordinary" springs are our specialty and we are equipped to fit any car or repair any spring, straighten axles and chassis frames on any make of car or truck.
It will pay you to tie up to our Spring Service Station.

COZENS & MAYNARD
Automobile and Truck Spring Service Station
4 to 6 Wood St., TORONTO

For Sale

Lathes, Drills, Milling Machines, all kinds of Used and New Equipment

If you are thinking of buying equipment for your Garage or Machine Shop it will pay you to write for a copy of

CANADIAN MACHINERY AND MANUFACTURING NEWS,
153 University Ave., Toronto, Ontario.

Please send me a copy of CANADIAN MACHINERY AND MANUFACTURING NEWS. I (or we) want to purchase the following equipment .....
.....
.....

Name .....
Street Address .....
City .....

Canadian Machinery
and Manufacturing News

In addition to a Buyers' Directory of leading manufacturers and dealers in New Machinery you will find lists of Used Equipment of almost every conceivable kind. And if you cannot find listed what you require, drop us a line and we will locate it for you. This service is free to readers of CANADIAN MOTOR TRACTOR AND IMPLEMENT TRADE JOURNAL. Just fill out the form on the left.

GOVERNOR OF MANCHURIA HAS ARMOURED LIMOUSINE

AN AUTOMOBILE which is at the same time one of the most luxurious cars ever produced and also a steel walled fort that is bullet and bomb proof, has just been delivered to the Governor-General of Manchuria. This car, the first of its kind, is likely to be followed by many others for officials whose lives are in constant danger now that the story of its construction can be told. It was especially designed and manufactured by the Packard Motors Export Corporation.

The constant danger in which the Chinese Governor General of Manchuria lives and the fear that efforts would be made to prevent the delivery of the car, made it necessary to maintain the utmost secrecy until the machine had been delivered to him. Now that the delivery has taken place it becomes possible to give the story of this remarkable machine.

In appearance, however, the car is simply a luxurious limousine, of a deep tan color with mahogany top and trimming, special headlights and unusually heavy springs. Inside the fittings are worthy of royalty, the panels are of inlaid mahogany with more than twenty different kinds of wood used in each. The fittings and all metal of the tonneau are of silver and cloissonne. The upholstery is purple and gold mohair.

But when it happens that His Excellency, General Tsan-Tso-Lin is in danger the car can be transformed in a second. The body itself is built of chrome-nickel steel and inside the top are chrome nickel steel shutters which slide down on roller bearings and cover the windows. Another steel shutter rises from the partition between the tonneau and the driver's seat. A Colt machine gun can be taken from under the driver's seat and fastened to a special bracket built at the right hand side of the cowling. Two loopholes open on each side and two more at the rear and automatics or rifles can be fired through them.

Finally there are swivels fastened above the running board with belts provided, so that three soldiers can be strapped to each running board with their hands free to handle weapons. So if it is attacked the luxurious limousine becomes a bullet proof armoured car, defended by a machine gun with six soldiers on the outside and by six more rifles on the inside.

The great weight of the car made it necessary to strengthen the whole frame of the vehicle. The running boards were reinforced, extra leaves were added to the springs and Westinghouse air springs were attached. Windows were constructed of Triplex glass which will not splinter if struck by a bullet. The total cost of the machine is in the neighborhood of $35,000.00

IS YOUR BUSINESS 100 PER CENT. EFFICIENT?

AN American concern sends out to its customers the following standard whereby one may estimate how near his store comes to being 100 per cent. efficient. One of the best things in the world for a dealer is a periodical self-examination. This "Standard" provides a means of putting down on paper an appraisal of one's store as compared with the perfect store. One who takes the trouble to set down the correct figures in the spaces at the right hand side of this questionnaire will find where his weak spots are and thus be enabled to take steps intelligently towards correcting the faults of his store and its service. Here is the "Standard":

Perfect.	Your Grade.
6—Have you an up-to-date business and accounting system in your store?	.....
5—Is your business growing?	.....
6—Do you take an annual inventory?	.....
5—Do you figure selling price so as in all cases to guarantee you a profit?	.....
5—Can you state definitely what your overhead expense percentage amounts to?	.....
5—Have your sales reached a maximum for the expense involved in selling?	.....
3—Do you know what lines pay best and which pay least?	.....
3—Is your advertising campaign carefully planned ahead?	.....
3—Do you push nationally advertised goods?	.....
5—Do you discount your bills?	.....
3—Do you make special efforts to sell the more profitable articles?	.....
6—Do you turn stock at least four times a year? (Allow 1 for one turn; 2 for two turns; 4 for three turns; 6 for four turns)	.....
2—Do you meet your customers personally?	.....
5—Do you buy from more sources than necessary?	.....
4—Are your windows regularly and attractively trimmed?	.....
5—Do you give prompt, courteous service?	.....
4—Do you and your clerks study the merchandise you sell? (Do you know how it is made and best talking points?)	.....
3—Do you make use of the manufacturers' free advertising cuts and other helps?	.....
3—Do you belong to the State Association?	.....
6—Do you attend the meetings? (Allow 6 for any one association meeting regularly attended)	.....
3—Do you read at least three good trade journals? (Allow 1 point for each.)	.....
2—Have you a good mailing list?	.....
3—Do you use it?	.....
5—Do you have co-operation and team work in your store?	.....
100% Total	Total Grade .....

GRAY-DORT CHANGES

W. G. BELL has resigned as president of the Cleveland Tractor Co. of Canada to become director of sales of Gray-Dort Motors, Limited, of Chatham. Mr. Bell brings to his new duties a particularly extensive automotive experience. He is a Canadian, born in London, and has been connected with the motor vehicle trade in Canada and in the United States for eighteen years.

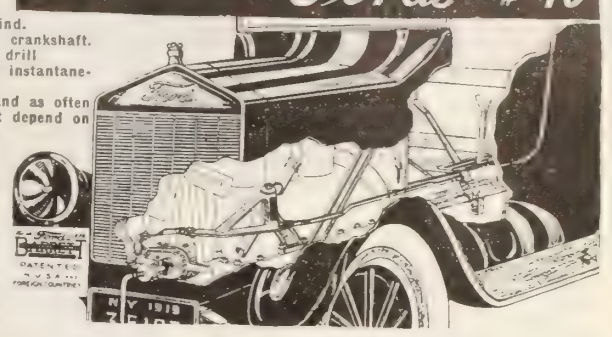
Gray-Dort Motors also announce the appointment of Johnson R. McGee as sales manager. Mr. McGee has been with the Gray organization for thirty years, and is well known in the motor car business throughout Canada.

The Gill Mfg. Co., Chicago, announced recently that they have established new branches at Spokane, Wash., and Houston, Tex.

Simple, Durable, Economical, Reliable

BARRETT SELF STARTER AND PRIMER

GUARANTEED FOR FIVE YEARS — For all Fords — $40



RELEASES automatically in case of backfire and does no harm to the operator, engine or starter.
No cables, no chains, no pulleys and no springs to wind.
75% increase of leverage on crankshaft.
Easy to install, no holes to drill
It STARTS COLD ENGINE instantaneously even in zero weather.
Ready for starting any time and as often as wanted because it does not depend on th running of the engine for power.
All essential parts made of the very best steel.
ABSOLUTELY NOISELESS.
Not a luxury but a necessity.
Endorsed by prominent automobile engineers and mechanical Ford experts as mechanically perfect in every resp ct and the best that has come under their observation.
The Special Primer which is supplied free with every Starter, vaporizes the gasoline direct into the cylinders, assuring a quick, positive start. The Primer is also operated from the seat.

From agents or direct from
IMPERIAL AGENCIES, 81 Victoria St., TORONTO

GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

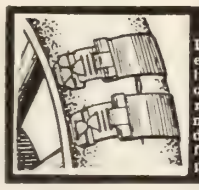
20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

WE GIVE
"Quality and Service"
IN
TRACTOR and TRUCK STEEL CASTINGS

Joliette Castings & Forgings Limited
Head Office: Transportation Bldg., Montreal
Works: Joliette, Que.

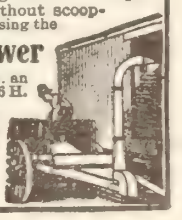


"THEY WEAR LIKE IRON," BUT BETTER.
Broughton's Steel Freely Hinged Blowout Boots. Carried for emergency like an insurance policy. A stock of these on hand will pay you in good times or bad. Wide and flat; easy on tire; easy riding; they hold in the lump. Centre plate renewable. Good for rim cuts, too. Non-skid. Suitable for most trucks and all autos. Put up in cartons. New 1921 design for straightside tires. They're Repeaters. Order from us or see any jobber's catalogue. The ends of the tread plate give support, like the buttresses of a bridge.

At your Jobber's or us
The Geo. H. Broughton Co.
126 Wellington St. West
Toronto, Ont.

Do you read Farmers' Magazine,
THE
Canadian National Farm Weekly
If you are interested in farm life and conditions, write us for a sample copy,
Farmers' Magazine
143 University Avenue
TORONTO

Elevates by Air Blast — No Chains Gears or Buckets
Move, clean and grade your grain in ONE operation; fill bins and cars without scooping and make more money by using the
Liberty Grain Blower
Elevates 30 feet—300 to 800 bu. an hour. Only ONE moving part. 6 H. P. runs it. One man can move it. Costs half price of oldstyle elevator.
FREE BOOK illustrated, tells how to increase grain profits. Send name for copy—a card will do.
LINK MFG. CO. Dept. 710
Portage la Prairie, Man.



CANADIAN Motor, Tractor and Implement Trade Journal BUYERS DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

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Auto Top & Equipment Co., 270 Dundas St. W., Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Geo. H. Broughton & Co.
Cozens & Maynard, 4-6 Wood St., Toronto.
Dustbane Mfg. Co., Ltd., Ottawa.
Imperial Agencies, 81 Victoria St., Toronto.
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The Liberty Tire & Rubber Co., Montreal, Que.

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AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILES
Motor Mart of Montreal, Montreal, Que.
Willys-Overland, Ltd., Toronto.

AUTOMOBILE TIRES
Ames, Holden. MacCready, Montreal.
The Liberty Tire & Rubber Co., Montreal, Que.

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The Frost & Wood Co., Ltd., Smiths Falls, Ont.
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International Harvester Co., of Can., Ltd., Hamilton, Ont.
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Butterfield & Co., Inc., Rock Island, Q.

DISCS

DITCHING MACHINES

DRILLS, TWIST
Butterfield & Co., Inc., Rock Island, Q.

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International Harvester Co., of Can., Ltd., Hamilton, Ont.

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John Deere Mfg. Co., Welland, Ont.
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ENSILAGE CUTTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

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International Harvester Co., of Can., Ltd., Hamilton, Ont.
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R. A. Lister Co. (Canada), Ltd., Toronto
Massey Harris Co., Ltd., Toronto.
The Frost & Wood Co., Ltd., Smith Falls.

FEED CUTTERS

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FENCING
Burlington Products Ltd., Hamilton.

GRAIN BLOWERS.
Link Mfg. Co., Portage la Prairie, Man.

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J. I. Case Threshing Machine Co., Inc., Racine, Wis.

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International Harvester Co., of Can., Ltd., Hamilton, Ont.
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Butterfield

ALMOST any cutting tool can be relied upon to cut with accuracy when new.

It is after it has been in use for some time that the test comes.

It is at this critical time that a "Butterfield" tool proves itself "a little better than the rest."

Even after you have received so much service that you would be content to throw the "old" tool away, a "Butterfield" continues to cut true.

It is this *extra* service, over and above what you expect, that makes "Butterfield" Tools the most economical to use.

And then there is the satisfaction---and the profit---of working with tools that make no mistakes, that cause no delay, that do the good work that you pride yourself on doing. It is just as easy to have tool satisfaction in place of trouble. All that is necessary is to insist on "Butterfield's." *Try Butterfield Drills, Taps, Dies, Reamers and Milling Cutters and you'll know why we call them*

"The Tools You Buy Again"

BUTTERFIELD & COMPANY, *Division*

Union Twist Drill Co.

ROCK ISLAND - - - QUEBEC

Toronto Store: 220 King Street West **Montreal Store: 131 St. Paul Street West**

Sell the line already half sold

What Is Economy?

It certainly is not being practised by the farmer who is doing without necessary farm machines to "save money," or buying "cheap" machines that are in reality the most expensive.

Lister Farm Machines

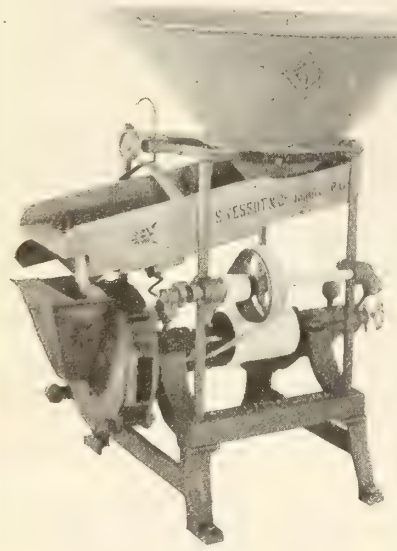
are the last word in economy. They have won a world-wide reputation for absolute reliability. They save on unnecessary repairs the extra first-cost that QUALITY calls for. They are the least expensive machines the farmer can buy.

Sell Lister Machines on the Quality-Economy basis and you will see tidy results.

Melotte Cream Separator, Lister Premier Cream Separator, Lister Milker, Lister Engine, Lister Silo, Lister Ensilage Cutters, Etc.

R. A. Lister & Co. (Canada) Limited

Stewart St., (near King and Bathurst) Toronto, or at Wall St. and Portage Ave., Winnipeg



A Selling Feature Possessed by no other Feed Grinder

"Vessot" Grinding Plates outgrind and outwear all others. They are cast, turned and tempered by special secret process that ensures extra density, hardness and wearing qualities. There is only one Feed Grinder in which "Vessot" Plates are used—the "Vessot."

"Vessot" Feed Grinders have, therefore, longer life and greater efficiency, they require less adjusting and give less trouble in operating.

The "Vessot" Agency Plan you can get from any International Harvester Company branch office is interesting because, in addition to good profits, it offers you selling features possessed by no other feed grinder.

INVENTED AND MANUFACTURED BY

S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by

International Harvester Co. of Canada, Limited.

Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John.

Dairy *and* Household Supplies

HIGH SPOTS IN SEPARATOR SELLING

By M. M. HUNTING

International Harvester Co.

A BANKER, who settled in the community where he now lives when holes in the wilderness, representing farms, were few and far between, was asked recently his opinion of dairying as a branch of farming. "We have yet to learn," he replied, "of one dairy farmer in this district who has become bankrupt." By this he meant that the dairy farmer has all the year round a cash income from the sale of his dairy products—that he always has money—that he is usually a cash customer at his local store, and is frequently a large depositor at the bank. He is the kind of man that the banker can safely lend money to because dairy products are almost sure crops.

Isn't there a business tip to the implement dealer in this plain statement from a man so long experienced in dealing with farmers? Nowadays when cash business is so desirable and seems so hard to get, doesn't it appear to be the part of the ambitious dealer to cater to the trade that has the cash? Yet many regard cream separators, churns and other dairy accessories as a sort of side-line that must be handled because there is an occasional call for them but which do not justify any special sales effort because they represent too small a volume.

I venture to state that any dealer would rather sell ten $100 cream separators for cash than two $1000 automobiles on deferred payments, though the latter may require less sales effort and represent double the volume.

Why, then, do so many dealers solicit business on the lines that are usually sold on time, and let the farmer come in and ask for a cream separator?

If the prospective buyer would always ask for a separator when he wants one this would not be so serious, but many farmers who have their minds thoroughly made up to buy, will go into a dealer's store, and failing to find a machine set up, will go to another store, or if they fail to find a sample in any store, will buy from a mail order house.

A stumbling block in the way of success in selling cream separators, even higher and more dangerous than failing to keep samples, is the sample machine which becomes the catch-all for old newspapers, tools, and a number of other miscellaneous articles. This machine is never ready to demonstrate, and when a customer does ask to see it, its accumulation of dust and riffraff must be removed before it can be shown. Think what the impression must be upon a prospective buyer, especially when it is the farmer's wife. She takes pride in the product of her dairy, and has learned that cleanliness is one of the important precautions in handling milk and cream. Finding the sample cream separator in this condition will counteract 90 per cent. of what the dealer can say in favor of the machine.

Think, Mr. Dealer, what you would do under similar circumstances. Supposing you needed a pair of shoes and going to the shoe store were offered a pair covered with mud. Would you buy them? Can you expect your prospect for a cream separator to be more impressed with a dirty sample than you would be by muddy shoes?

Getting Prospects

But supposing everything to be ideal as far as the store is concerned, and the sample well displayed, what is going to bring prospects to you? Most manufacturers of separators have a complete advertising campaign which will be mailed to your prospects for the asking, but if you fail to connect your store with this campaign so that the prospect knows where to go to buy the machine you will not profit much by the advertising. First of all there should be either a sign or window display showing that the separator can be bought in your store, and it is only a part of good generalship to use local newspaper ads at frequent intervals.

Realizing that the dairy farmer is a desirable customer and worth going after, how are prospects to be found for cream separators and other dairy accessories? Nothing is easier. You can scarcely drive a dozen miles in the country without passing one or more farms where dairy cattle will be seen grazing in the pastures or barn-yard. This should indicate at once to the dealer that there is a possible prospect for a cream separator. A sample machine is not a very cumbersome article and can be carried on every trip to the country. With a sample cream separator you will have several chances to show the machine to prospects along the road, and it gives you a chance to come home with some kind of an order to pay for the trip even though you may not land the order you originally went after.

Separator Aid in Raising Stock

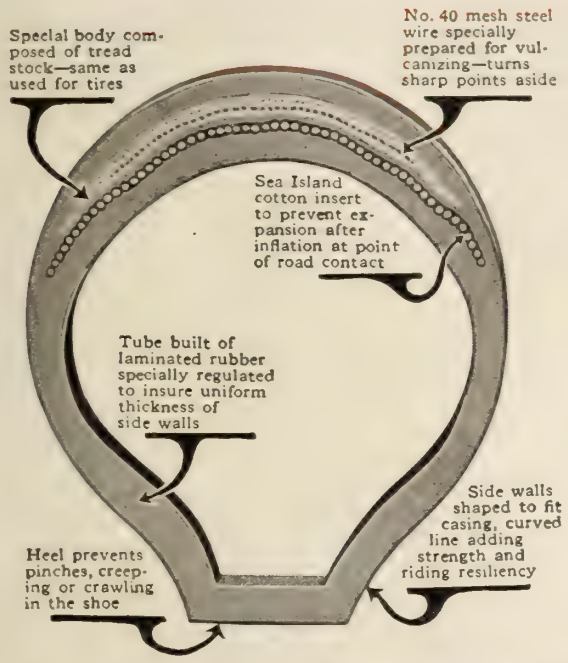
But what sells cream separators? I venture to say that the average dealer thinks of a cream separator only as a device to skim milk and which saves a larger percentage of cream than hand skimming. But did you ever stop to think that without a cream separator a farmer can scarcely build up a successful dairy herd? Hugh G. Van Pelt, a leading authority, says: "The day has come when the constructive dairyman must realize that to have good cows, he must use good sires and raise his heifer calves well." Every good authority will tell you that this cannot be done economically without warm, sweet skimmilk of uniform temperature and sweetness every day, and it is impossible to have this kind of skimmilk without a cream separator. A separator then becomes the foundation of the dairy herd.

No dairy farmer can utilize successfully the waste products of his farm without hogs, and hogs can be brought to market weight quicker with corn and skimmilk than any other ration.

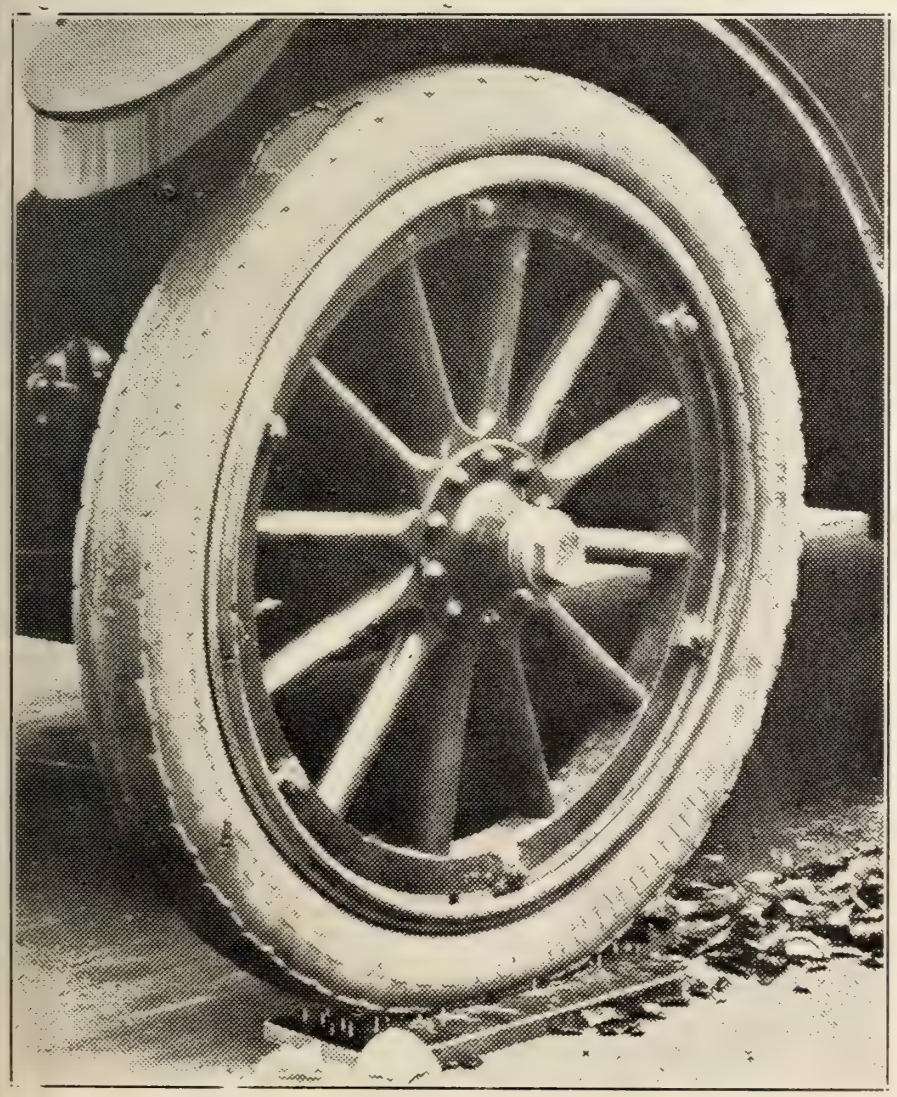
When you present this argument to some farmers, they are going to say "Yes, but I can get all the skimmilk I want from the creamery." Then is the time to point out to him the dangers of using this kind of skimmilk. If he could be sure of getting the milk which he brought in, without contamination, it would be well enough as far as hog feed is concerned, but not for calves. Dairy skimmilk is almost always a mixture of every customers' milk. It may contain disease germs. It is almost invariably cold before it reaches the farm and often sour. The hogs may thrive on it so long as it is free from disease germs, but a calf must have skimmilk of uniform temperature every day.

Space does not permit going further into details, but the dealer who is really interested and awake to the possibilities of selling cream separators and other dairy accessories can secure ample material on all these subjects from the manufacturers of cream separators. The cream separator is more in demand to-day than any other farm machine. During the past year farmers have been more dependent upon their cows than in many years past. Often they have found it pays better to feed grain to stock than to sell it direct. The dealer who takes advantage of this opportunity, and realizes that, as well as being one of the easiest sold farm machines, it is usually also a cash sale, will reap a reward during the next twelve months.

Here is a Real Puncture-proof Inner Tube


Special body composed of tread stock—same as used for tires
No. 40 mesh steel wire specially prepared for vulcanizing—turns sharp points aside
Sea Island cotton insert to prevent expansion after inflation at point of road contact
Tube built of laminated rubber specially regulated to insure uniform thickness of side walls
Side walls shaped to fit casing, curved line adding strength and riding resiliency
Heel prevents pinches, creeping or crawling in the shoe

"MAC-TAG" is positively proof against blow-out or puncture. Its use insures freedom from tire troubles. "MAC-TAG" travels over glass, upturned nails, and other sharp objects without puncturing. MAC-TAG is a shaped tube of laminated rubber specially regulated to insure uniform thickness of walls. It fits the casing. It cannot expand at the point of road contact—an insertion of Sea Island cotton prevents it.



This illustration is from an actual photograph. It shows Mac-Tag Inner Tube in a worn casing being driven over broken glass and tenpenny nails driven up through an inch board. Fourteen men were in the car. The Mac-Tag was not punctured.

This insert is reinforced by a special body composed of tread stock in which is embedded No. 40 Mesh steel wire specially prepared for vulcanizing. This turns aside all sharp points.

Explain Mac-Tag construction to your customers. Demonstrations will surely create sales.

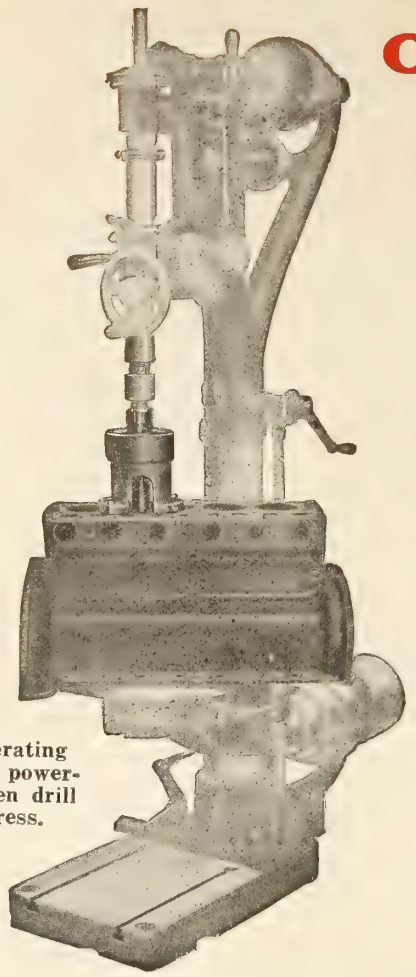
Write for particulars of our interesting and profitable selling proposition. Ask about our dealer helps.

THE
Liberty Tire and Rubber Company
OF CANADA, LIMITED

311-311A Transportation Building
120 St. James Street - MONTREAL, QUE.
JOS. O. GOURRE & CO. - Distributors

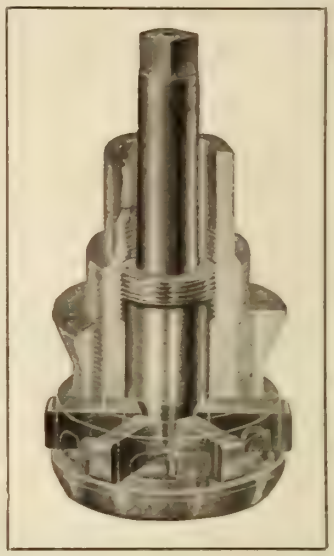
Here's How You Can Save More of Your Customers' Time

—and More of Your Own Money



Operating with power-driven drill press.

When a "big" customer comes into your shop and asks the least possible number of days it will take to get a reboring job back from the factory he'll think you're "some" workman when you say: "Mr. Jones, I can do that job right here in fifteen Minutes". And he won't lose any time in telling his friends about the great service he gets at your shop. In addition there are big profits for you in having a reboring department of your own. The



Cutter-Head

"You will note by the rigid construction of this cutter-head why a Universal leaves the smooth clean bore that it does.

Owing to the conical point of pin corresponding to the taper on back of cutter, the cutters are all adjusted at once by simply turning the pilot pin".

UNIVERSAL CYLINDER REBORING TOOL

will produce for you the same kind of work that is done in factories of the Ford, Dodge, Studebaker, Buick, Paige, Detroit, Chalmers, and other makers of cars, and trucks. These firms use and recommend this fast working, accurate tool.

As an extra good measure of service, when overhauling your customers' car use only scientifically correct "Wilkie" Piston Rings which are made in standard and oversize. "Longer service with less trouble" is the verdict of all who use them.

Increase your earning power by adopting this efficient tool. Drop us a line for complete information and list of jobbers.

Wilkie

MANUFACTURED BY

Windsor Machine and Tool Works

312-316 Pitt Street West, Windsor, Ontario

CANADIAN

MOTOR, TRACTOR AND IMPLEMENT TRADE JOURNAL

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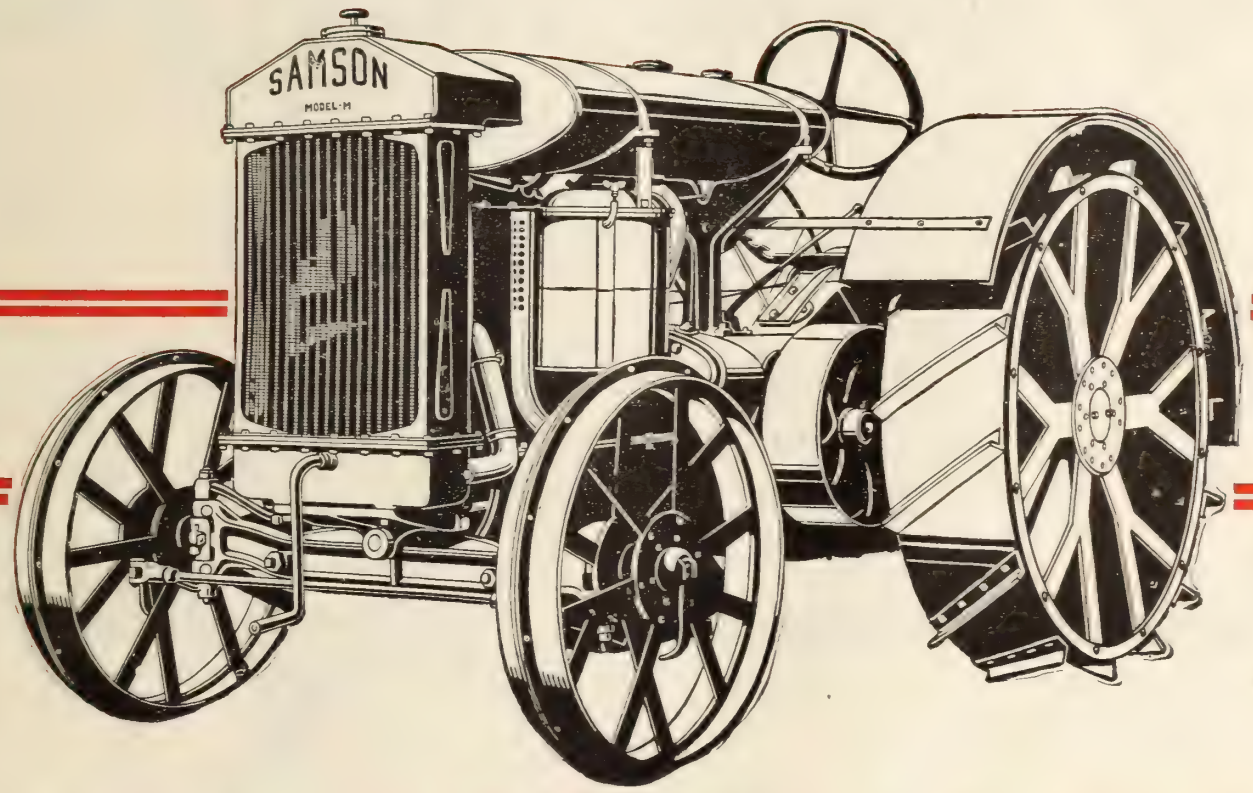
THE SAMSON TRACTOR

Leads In Its Field



See The Samson Tractor and The Samson Truck At The Toronto Exhibition

Samson Wins in Competitive Tests

The Samson Tractor has won out in many competitive tests with other tractors. It wins because of its surplus power and its high efficiency for belt and draw-bar work.

Farmers who have used the Samson are enthusiastic. They boost and thus help the dealer to sell more. Samson Trucks and implements complete this splendid line.

A Unique Proposition For Samson Dealers

Live dealers in territories not yet allotted should write or wire.

Our new proposition is most attractive, and is worthy of the serious consideration of the best dealer in every community.

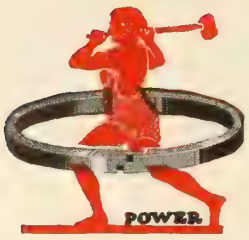
If you are capable of highest class representation, write us and arrange to see us at the Toronto Exhibition.

SAMSON TRACTOR CO. of CANADA, LIMITED.

DIVISION OF GENERAL MOTORS OF CANADA, Limited.

OSHAWA, ONTARIO REGINA, SASKATCHEWAN

Gill



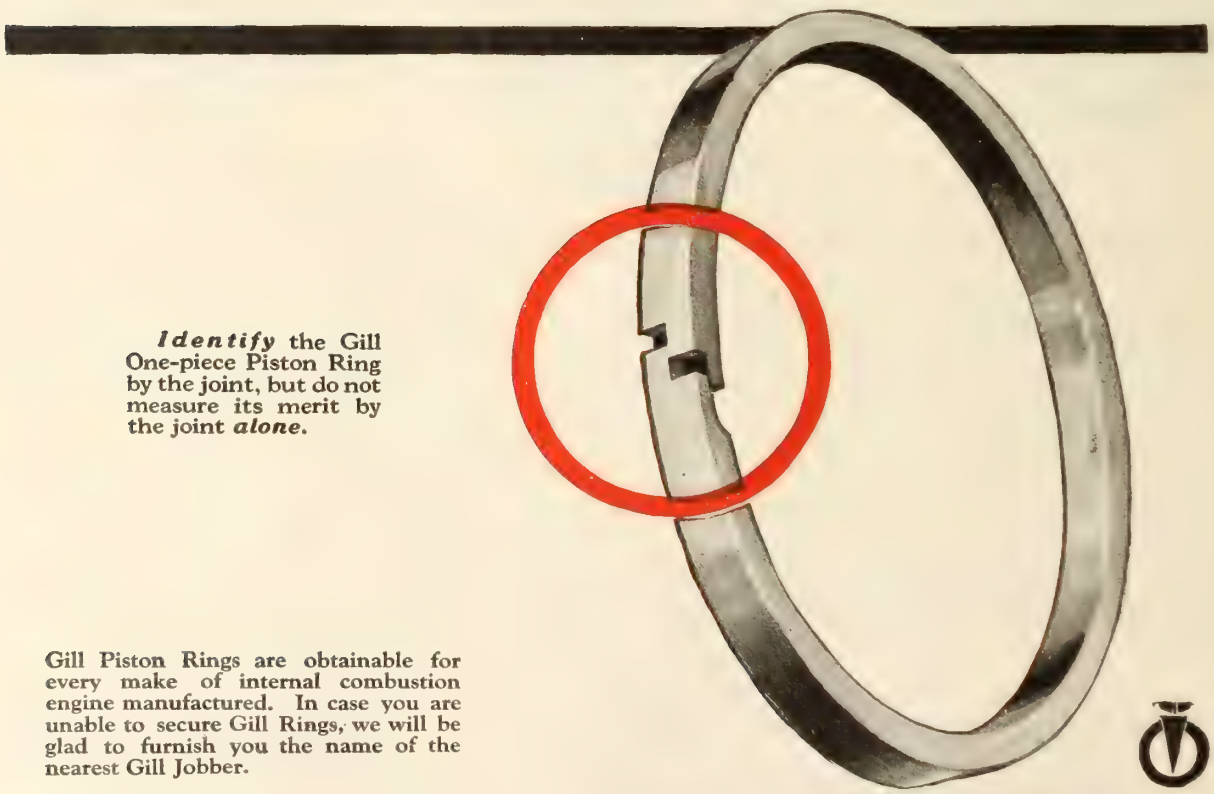
One-piece Piston Rings keep spark plugs clean

because: they are ***individually*** cast from a special gray iron that resists the ravages of heat and retains its elasticity through the most trying piston ring service; because they maintain unfailingly a snug, all-around, leakless contact with the cylinder walls through thousands of miles of usage; and because they have a leakless joint that stays leakless.

Oil does not work up past Gill One-piece Piston Rings; and as a result spark plugs are kept clean.

MADE IN CANADA BY:

BROWN ENGINEERING CORPORATION, Limited
415-19 King Street, West Telephone Adelaide 425
TORONTO, CANADA



Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint ***alone.***

Gill Piston Rings are obtainable for every make of internal combustion engine manufactured. In case you are unable to secure Gill Rings, we will be glad to furnish you the name of the nearest Gill Jobber.

Stocks carried in all the principal cities and towns of Canada by Canadian General Electric Company, Limited

Cletrac-

Will Lead This Fall —

HARD THIS WAY, BUT

EASY ON A TRACK THE CLETRAC WAY

Cletrac has long been the popular tractor, but never more so than this year. Farmers are trying to cut production costs, and no other tractor will cut them like Cletrac. With its tank-type tracks it works easily when the ground's soft—gains valuable days—cuts labor costs—and brings bigger crops.

You can make Cletrac your leader the year around. Farmers know it's the one tractor dependable everywhere in any weather, 52 weeks a year. Remember, too, you're backed by a Dominion-wide advertising campaign that's reaching nearly every Canadian farmer.

Get your share of Cletrac profits. Fall is almost here, and it is time to send in your order. Hundreds of the 350,000 Canadian tractor prospects are right around you. Go after them hard and go after them early. Cletrac behind you a successful fall is assured.

We have a mighty attractive dealer proposition. Write us for the details to-day, and get a copy of our booklet "Pay Dirt in the Tractor Field."

SPECIFICATIONS

Horsepower: 12 at drawbar, 20 at belt-pulley
Length: 96 inches
Width: 50 inches
Height: 52 inches
Weight: 3455 pounds
Turning Circle: 12 feet.
Traction Surface: About 800 square inches.
Center to Center of Tracks: 38 inches
Belt Pulley: Diameter 8 8 inches, face 6 inches.

THE CLEVELAND TRACTOR COMPANY
OF CANADA, LIMITED

Home Office
WINDSOR, ONT.

Western Sales Office
261 FORT ST., WINNIPEG

Cletrac
TANK-TYPE TRACTOR

It doesn't cost the Fiat Dealer One Cent

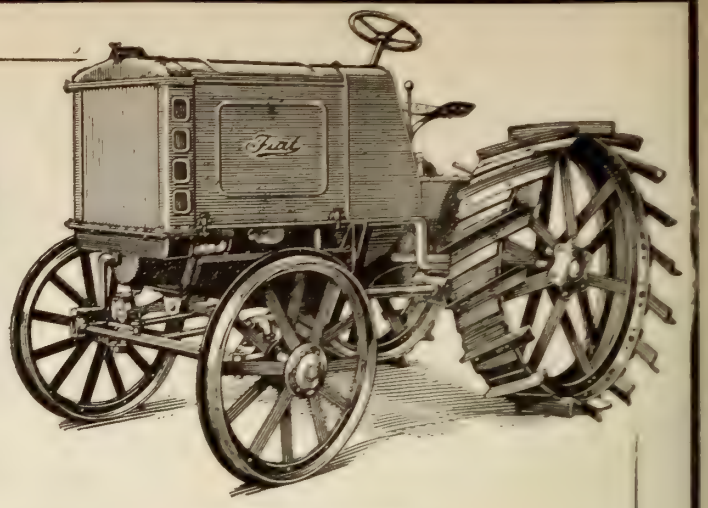
To give this unique service

Immediately you link up with the Fiat Tractor your place of business becomes a real service station for Fiat users.

You can supply any part required ***instantly***—your customer won't be forced to wait a minute—***and yet you have not one cent invested in Fiat spare parts.***

Here is how it is done:

As a Fiat Dealer with your first purchase a full assortment of all necessary spare parts is shipped to you on consignment; as the need arises you sell these parts and purchase others to keep your stock complete. Notice that the only money you spend on parts is the money you have already received for them from customers.



FIAT TRACTORS

"Fiat" is an honored name of long standing in automotive circles. Everyone knows the record of Fiat Cars in all parts of the world.

Fiat Tractors are built in the same gigantic shops where equipment of the very latest design and mechanics of the utmost skill combine to produce a machine of great power and endurance with low upkeep cost.

Fiat Tractors have been proven in tests in competition with the best in Europe and America demonstrating an all round superiority, especially in the matters of low fuel cost, per acre in plowing and low upkeep cost.

The Fiat Farm Tractor is a full 18-25 H.P. machine that sells in Canada at

$2,000

Fiat Tractors are made in Turin, Italy. With the unique Fiat Service centred in your garage or warerooms, they might be made in your own town for all the delay your customers will experience in procuring parts.

While you're pondering on the value to you of such a service, drop us a line for fuller particulars of this unique Fiat proposition. We want a dealer in your locality.

See Fiat Farm Tractors demonstrated at Canadian National Exhibition. Look for them north of the big grand stand.

M. A. KENNEDY, LIMITED

Fiat Distributor for Canada

106-110 Richmond Street West,

TORONTO

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 TORONTO, AUGUST, 1921 Number 8

Automotive Equipment Association Plans Large Sales Promotion

Sales Promotion Week August 6-13 First Step in Movement. $40,000 Voted at Convention at Mackinac Island, for First Year for Educational Development of Jobbers, Salesmen, Dealers and Garage Men

AT the summer convention of the Automotive Equipment Association held at Mackinac Island, Mich., July 4-9 a trade wide sales promotion plan was introduced and unanimously adopted by upwards of four hundred delegates representing 132 manufacturing and jobbing companies. Forty thousand dollars was appropriated for the first year's work and a permanent committee was appointed to direct the undertaking.

The plan contemplates a trade-wide educational movement to stimulate interest on the part of jobbers, their salesman and dealers, in automotive equipment and to devise ways and means of more intelligently and aggressively merchandising the same. The scheme applies to both the United States and Canada. The details of the plan have not been worked out yet, but the work will probably be developed section by section, throughout the States and Canada, with the sales promotion director and his assistants personally presenting the idea to groups of jobbers and their salesmen, and through them to the dealer.

The association voted to carry on the work for one year at least, but the special committee named is a permanent one, and the association plans to make the sales promotion permanent also. The committee appointed to direct the undertaking is as follows:

Robert A. Stranahan, president of the association and president of the Champion Spark Plug Co., Toledo; Howard M. Dine, of Dine-De Wees Co. Canton, O., jobber; N.H. Oliver, of Metal Specialties Co., Chicago; W.W. Lowe, of Electric Appliance Co., Chicago, jobber; L.R. Safford, of McQuay-Norris Mfg. Co., St Louis.

Sales Promotion Week

While the plan is being worked out and in order to keep up the interest and enthusiasm until the committee can get to work, a Sales Promotion Week, August 6-13 has been decided on. On these dates all over the States and Canada, where jobbers can make the arrangements, travellers will carry the idea in person to the retail trade and help stage special efforts to move dealers' stocks.

Retail Commissions

In supporting the sales promotion plan the association showed a sentiment in favor of retail commissions on equipment sales. Several cases were cited of dealers and garage men who have made big sales and profits on accessories by paying commissions above their regular salaries or wages to salesmen, mechanics and office employees.

Funds for the sales promotion work were provided by a draft of $15,000 on the treasury and an assessment of $50 on each member, the latter yielding $25,000. Without a formal vote the members promised an additional $50. each, if the aggregate of $40,000 is not sufficient to inaugurate the movement and carry it on for a year.

Fundamentally the sales promotion idea is educational. It is an all round scheme intended to promote better work

A Good Hot Weather Drink

on the part of all handling accessories. The manufacturers realize they themselves need to do better work as well as the jobbers and dealers.

Retailer Important Link

"In the educational plan to be developed the greatest stress will be laid on assistance of the retailer." says the Motor World. "While the manufacturer and jobber and their sales people are making automotive equipment merchandising their life work and necessarily putting a great deal of time into the study of the subject, the average retailer—automobile or truck dealer or garageman—can treat it only as a part of his business. The sales promotion movement aims to help the retailer become an automotive equipment specialist without giving all his time to the undertaking. In fact, it proposes to give him a great deal of useful and profitable information at very little expenditure of his time, showing him the opportunity for profit in accessory merchandising and showing him how to take advantage of the opportunity by vigorous display, advertising and selling work. It proposes to carry the better business story to him through the medium of the jobber and the jobber salesman, thus setting in motion the machinery of education, at one time, for all three classes of workers in the trade."

How long it will take the sales promotion committee to engage a staff and get a plan in operation nobody knows. The committee plans to get to work right away and to hold frequent meetings, but at best considerable time must elapse before the trade can have the benefit of the new movement. In the meantime Sales Promotion Week provides an opportunity to let off steam.

Let's not leave the sales promotion idea in the predicament of the swain whose intended bride changed her mind after he had got into his blue serge suit and patent leather shoes—all dressed up and no place to go!

Let's clean house and get ready to work with the sales promotion staff and let's show the A.E.A. we are 100 per cent for the idea by making Sales Promotion Week, in wholesale and retail, a red-letter week in the history of automotive equipment merchandising.

Canadian Firms Represented

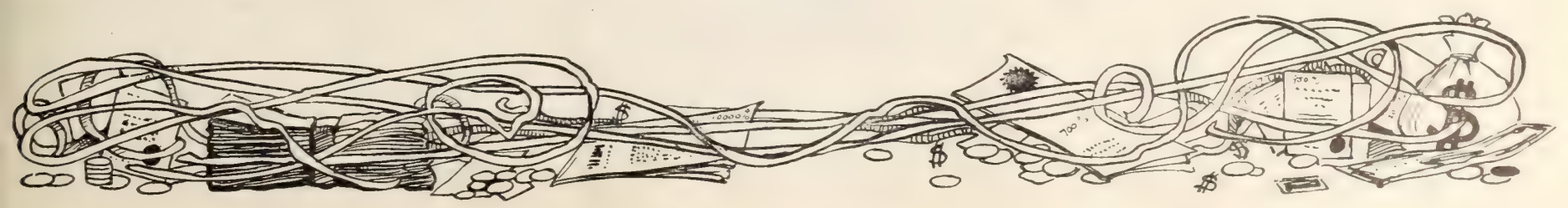
The following are the Canadian firms which were represented at the convention, and their delegates:

Jobbers

Cutten & Foster, Toronto, Ont., W.L. Moncur.
Ludger Gravel, et Fils, Montreal, Ludger Gravel.
Hyslop Bros., Ltd., Toronto, Ont., A.M. Bottcher.
Keyes Supply Co., Ltd., Ottawa, Ont., C.G. Keyes.
Lamontagne, Ltd., Montreal, P.E. Joubert.
John Millen & Son, Ltd., Montreal, J. Ernest Millen.
Motor Car Supply Co., Ltd., Calgary, Alta., L.A. Kavanaugh.

Manufacturers

Canadian Lamp and Stamping Co., Ford City, Ont., E.A. Soulier.
Champion Spark Plug Co., Windsor, Ont., A.J. Hayes
R.G. Edgecombe Co., Ltd., London, Ont., G.T. Edgecombe.
Moto-Meter Co., Inc., Hamilton, Ont., S.E. Ryder.
McQuy-Norris Banfield Co., Toronto, Ont., E.J. Banfield.



Canadian Exhibition is Farmers' Mecca

And Because it is That the Automotive Dealer Should See to it That He is There, or is Represented to Mix With His Prospects and See Latest Developments in His Line

THE Canadian National Exhibition, Canada's great "National" annual, will be held in Toronto from August 27, to September 10. To this big fair, hundreds of thousands of city folks, townspeople, and farmers flock to see the latest development in everything he modern Canadian uses. These farmers and townspeople will see the horse races, the boat races, the midway, and a host of other entertainments, but they will also pay a visit to the automobile, truck, tractor, accessory and farm machinery exhibits.

Everybody is friendly, in fact friendliness in a seemingly unbreakable bond, binds everybody together like one intimate community for the time being.

The manufacturer, jobber or dealer who fails to take advantage of all this friendly enthusiasm is losing a most valuable opportunity.

Merchandising under ordinary circumstances, particularly in the larger centres, is, by the very nature of things, impersonal. It is often hard to interest the public in merchandise, and always a task to sell. But here in the midst of Canada's big annual fair, everybody is interested in everything and can always be sold something.

This year, the manufacturers and jobbers of automobiles equipment, and farm machinery, will be well represented and will have on display everything the dealer is interested in.

Are the automobile and power farming dealers fully awake to the opportunities for education and sales at such an exhibition?

Here the dealer will meet with the manufacturer, will learn of the latest development in machines and equipment, and probably get some new ideas on display and merchandising.

No dealer can afford in these days to lose any opportunity of cooperation with the manufacturer. Likewise no manufacturer can afford to lose any opportunity of cooperation with the dealer. And neither can afford to pass up this best opportunity of all the year to meet interested prospects.

Every dealer who can arrange it, should take a holiday from his business and browse around the automobiles, accessories, trucks, tractors and implements. He should note the changes, if any, should mix with the crowd, and listen to comments by interested spectators and try to learn something concerning what the public wants and expects. The dealer may thus pick up a few ideas which will inspire him to new selling effort.

Manufacturers of automotive equipment and farm machinery who exhibit at this exhibition do so to stimulate the interest of their dealer trade, and also to place their goods before the consumer.

In respect to the need of such a stimulant at this time, it probably never was more necessary, just nearing the end of a rather dull summer and a few weeks before the winter season begins, when business is usually dull anyway.

The strong resistance offered by the public has had a depressing effect on many dealers, and has tended to slow them up in their endeavours. The big shows and exhibitions are intended to meet such a situation. And they are going to help at an opportune time, both to put new heart into the dealer and to induce the public to buy.

No thoughtful dealer can doubt that business is coming back. It is coming back and the automotive and power farming dealer is going to help it come back and keep it at a good level of prosperity.

The increase in the buying curve is going to climb slowly, but it will climb nevertheless surely.

Thoughtful manufacturers and dealers don't expect a sudden upward trend to the curve, nor do they look to the Canadian National to overcome everything in the nature of sales resistance, but they do expect an added interest to accrue which will most probably lead to goodwill and future sales.

Therefore Mr Dealer, make a point to journey to this Mecca. Bring your enthusiasm with you, and, if possible some of your prospects. Introduce them to your manufacturer. Show them the latest thing in motor cars, trucks, accessories, tractors and farm machinery. Talk to them about their businesses and try to show them where some of this new equipment on display will help them to greater profits.

A general view of the Exhibition Grounds; the Transportation Building is seen in the distance

The farmer, probably the dealer's largest buyer, has not been buying because he rebelled against a condition which sent his crop prices down in a steep curve, while other commodity prices stayed up or declined slowly. This situation is gradually being adjusted, and when the farmer harvests this year's crops there is every indication that he will get a fair remuneration in return for his labor, owing to the fact that a number of the European countries, who were not in the market last year, have intimated that they intend to purchase large quantities of wheat, etc., on this continent. This will bring the farmer back as a buyer, and as the farmer leads any return of buying in this agricultural country, there is much hope in the near future of a general resumption of buying.

A Heart-to-Heart Talk with the Credit Man

In Which He Tells a Salesman the Difference Between a Dealer's Willingness to Pay His Accounts and His Ability to Pay Them

By DONALD ROSS

"WE OUGHT to give Jim some credit, though," protested the young salesman warmly. "He is mighty anxious to go into the tire business on a big scale, but just now he's tied up in a real estate deal and needs a little time to handle his account. But he's as honest as the sun, Mr. Sharp, and we can take a chance on him without much danger."

The Credit man passed his fingers softly through his thick hair, rapidly graying over the ears, and smiled back at the salesman.

"I knew Jim when you were going to kindergarten," he replied, "and he's just as honest as you think he is. As a youngster he was the only one in the gang who wouldn't raid an orchard or stone a tramp dog. And he grew up to be that kind of a man. I know he's honest all right, and therefore willing to pay, but willingness to pay and ability to pay are two different things, my boy."

"Selling and collecting would be one long, sweet dream if all the folks who owe us and wanted to pay were able to do so. Don't for a minute think that all the firms whose names are on the debit side of our ledgers are there because they're trying to beat us. Most men are honest; most men like to feel the glow of satisfaction that comes with discharging a debt. We've lots of that kind among our customers and when they find it impossible to take their extra discount on the tenth of the month and increasingly difficult to pay every succeeding tenth, they spend many a restless night, and worry over it, perhaps more than I do. And that would be going some, too, for every one of these gray ones up here represent a flock of Jims and Toms and Bills on whose ability—not willingness, son—to pay, I've made a bet with myself. In the ordinary course of events they'll pay, every one. But a wife or baby may get sick or die, a garage may burn, a crop may fail, a lot of bad debts may unexpectedly pile up, then profits are wiped out—and, incidentally, Sharpe's judgment gets another wallop. You see, that's the way it goes, everyone's willing to pay, everyone feels bad if he can't, but when it comes to the pinch, everyone has to see that his own pantry is kept stocked first. And that often means that this company's pantry has to suffer."

"Credit, I suppose," said the Salesman, "is based mostly on the indebtedness on a man's business, and how much of his wealth he's slipped into his wife's name."

Credit Based on Number of Things.

The Credit man laughed. "Credit," he replied, "is based on a number of things. Extending a man credit is often more an expression of our confidence in his honesty than anything else. And that confidence is based on **past performances.** You occasionally, I suppose, put up a little money on a horse race. You study a form-chart and see what the past performances of certain speedsters have been. Then, based on the number of firsts, seconds, or places, you back a certain entry. Credit isn't extended in exactly that way, but the promptness with which a man has paid his bills in the past, the way he takes advantage of his cash discounts, the absence of difficulty in effecting settlements, certainly do play an important

part in extending credit. And occasionally, too, I do back long shots. Lots of long shots win in business as well as on the track. But when it's the Company's money at stake instead of mine, I can't back many dark horses.

"You see, son, the dealers and ourselves are in just this position: he buys our goods and sells them. Actually, it seems, he ought to drop that money into a special till in the cash register and keep it to pay our bill when it's due. But he's also buying many other articles and he wants to keep turning the money over. Maybe the other lines don't move so fast, or maybe, as I said before, there's a sick wife or baby, a fire, a crop failure. His own pantry claims his attention first. So, we have to bear the brunt. But here's our position; at least two thousand mouths depend for food on our ability to collect enough money to pay salaries and keep the wheels turning, two thousand backs have to be covered and two thousand pairs of feet shod. Our enormous bills for material must be met when due. And Sharpe has to see that the money to do all those things is resting comfortably in our right-hand pants' pocket when the collectors call around."

"Gee!" said the salesman, "I thought all you did was to sit there and write 'C.O.D.' on all my orders."

Cash Business a Safe Policy

"Every time I have to 'C.O.D.' one of your dealer's orders, I feel it as badly as you do. But I've been through the selling game and I know many dealers don't like buying for cash. But most men with small capital realize it is the best basis to be on. Then there are no nightmares to face at the end of the month, no bills payable to worry about. And there's every inducement to turn the goods over rapidly and buy more. Besides, when I see a live, aggressive chap making prompt payments, hustling for business and increasing his sales, I'm the first fellow to get behind him with a little credit and make things as convenient for him as possible."

"Well now, about Jim ——" began the salesman.

The credit man shook his head.

"I've been watching Jim for about a year and he's been getting into deep water. He doesn't take his cash discounts any more, has been letting his payments lag two or three months behind, and has been speculating in side-ventures that are undermining his regular business. In justice to Jim I can't let him get in debt to us until he's pulled himself up on dry land again. Jim has a flock of big ideas in his head right now and wants to tackle things on a big scale. That's a praiseworthy ambition, of course, but I want to tell you, son, that unchecked buying with a small surplus or none to fall back on, is a mine in the channel of trade. And Jim's ship will hit it as sure as fate. No, you tell Jim to curb his anxiety to carry a big stock, put a couple of hundred cold cash into fast selling sizes and work like the dickens to turn it over about ten or fifteen times this season. And you tell Jim, too, that as soon as he gets his feet nailed fast to the earth again and can take his cash discount as regular as the sunrise, Sharpe'll back him clear across the board for all he needs."

The salesman arose. "Thanks," he said, "I know a lot of customers in my territory who'll be interested in what you've told me. Why, Great Jupiter, instead of being a crusty pessimist who distrusts most everybody in creation, you actually study our customer's financial responsibility, and as you say, his past performances. You protect lots of men from getting head over heels in debt by having them buy on a cash basis. Why, as a matter of fact, you're working for our dealers as their credit man as much as you are for the company!"

"Old man," said Sharpe seriously, "the hardest part of my job in giving credit is to keep this company's customers from getting into discredit."

Pushing the Sale of Electric Plants

This is an Excellent Time for the Power Farming Dealer to Make His Initial Bow to Buyers of Farm Electric Plants. This is so Much Virgin Soil, that Sales Possibilities are Tremendous

By CLEMENT WHITE

FARMERS are easily interested in individual electric light plants because the equipment supplies reliable, economical power for operating various machines, in addition to furnishing saitsfactory means for illuminating the house and out-buildings.

The demand for electric light plants is increasing at a rate which justifies the interest dealers are showing in pushing the sale of the equipment. Farm-light and power plants are easily sold. There is a latent demand for the equipment in most farming communities. The buying impulse is easily aroused in the minds of farmers providing dealers demonstrate the wide range of economical service offered by individual electric light plants.

"It is a mistake to recommend farm electric light plants as equipment designed solely for illuminating the farm home," said a dealer. "Best results are secured by demonstrating the all around service electric current offers a farmer for operating power machines, bringing such modern conveniences as electric washers, irons, etc., to the farm wife, in addition to furnishing illumination. The more arguments the salesman advances in favor of the farm light and power plant, the greater will be his success. The average farmer is ready to invest in equipment which offers economical, practical service. He cannot go wrong by investing in a good farm electric light plant.

"I have known several instances where farm light and power plants enabled farmers to increase their profits, and live in comfort. Other dealers continue to gather favorable testimony in favor of the equipment. This proves the practicability of farm electric plants. They are not a fad. They cannot be classed as a luxury. The demand for the equipment will continue to develop, and the salesman who makes a conscientious effort to awaken the interest of local farmers in installing individual electric plants is certain to have a profitable business."

Select Reliable Plant and Study It.

Having decided to sell farm light and power plants in his territory, the dealer should select a line in which he has confidence, then acquire all the information possible concerning the merits of the plants he handles, and the different ways in which farmers may profitably utilize electric current. The first essential is to know how to demonstrate the plant. Some farmers believe all electrical equipment is of a complicated nature, requiring the services of a trained electrician. It is the dealer's business to know the merits of the plants he handles. Then he can show the reasons why an amateur can handle them successfully. Farm light and power plants have numerous points of merit which make effective sales arguments. Simplicity of construction is an important argument. The modern plant is compact; it has no complicated parts to cause trouble. It may be located in a corner of the cellar, in a shed, or any other convenient place where it is protected from the elements. The plants are easy to operate. The farmer who is accustomed to machinery can successfully care for a farm electric plant.

"I hadn't studied electric light and power plants for farm use any length of time before I was completely sold on the equipment," explained a salesman. "This is why I was able to awaken the interest of farmers in power and light plants. I find that enthusiasm on the salesman's part is a necessity. I do not believe the dealer who doubts the practical utility of the farm light and power plant should attempt to handle a line until he changes his viewpoint."

This is an excellent time for the power farming dealer to make his initial bow to buyers of farm electric plants. There is so much virgin territory that sales possibilities are tremendous.

Having selected a line and learned the points of superiority incorporated in its design and manufacture, the next essential is to start a vigorous publicity campaign. It is next to impossible to carry on a profitable business without the assistance of advertising. As a general rule, local newspapers offer the most effective means of reaching farmers. The "old home paper" is a far better means of publicity than some dealers realize. Space in the local papers is not expensive, and when filled with correctly prepared advertising messages will enable the dealer to locate desirable prospective customers.

TRY THE OTHER KEY

Arrange for a series of advertisements. Write each advertisement so it delivers a definite message. Interesting copy is easily prepared by showing the superior construction of modern light plants, ease and economy of operation, advantages offered by electric lights, all around versatility of electricity for operating cream separators, mechanical milkers, washing machines, etc. Illustrated advertisements are effective means for bringing trade. The manufacturer you represent can furnish cuts which are suitable for illustrating your advertisements.

"When I decided to sell farm light and power plants I knew I would be called on to do much publicity work," said a dealer. "I estimated that not less than forty farmers in my territory could make profitable use of electric current. This is why I was encouraged to carry out an intensive advertising campaign. I coupled my newspaper advertising with the distribution of special literature. The advertising matter furnished by the manufacturer proved beneficial, as it described the plants in detail, showing illustrations where electric power was being employed advantageously on farms.

"Experience convinces me that the best way to succeed at placing farm light and power plants is to advertise regularly. Persistent publicity methods pay. Farmers get the habit of watching for the advertisements, and sooner or later develop sufficient interest in the equipment to cause them to make further investigation.

"I secure best results from my newspaper advertising by keeping a list of prospective customers. When I find a prospective customer, I put his name on my prospect list, and supply him with descriptive literature which educates him to the many things electric current is accomplishing on farms throughout the country, and suggests practical uses for electricity on his individual farm.

Use Your Satisfied Customers to Increase Sales

"A local farmer who is successfully using an electric light plant is an excellent advertisement. Local farmers are more interested in the success of a man of their acquaintance, than that of a stranger. When Bill Jones installs an electric plant his neighbors are certain to be interested in the service he receives.

Keep them informed regarding the benefits Mr. Jones receives from electric current, and when he adopts a new way for employing electric current spread the news through the local paper.

"As a general rule the first few sales are the hardest to make. Extra effort is required to get the equipment introduced in a community where its merits are unknown; but subsequent sales will come easier. Persistent publicity effort will gradually create a demand for electric light plants, and the demand will gather momentum as additional sales are made."

Knowledge of Electric Service Valuable

The dealer's knowledge of the service offered by his electric light plants will come in handy when he starts out to demonstrate a plant to a farmer. The dealer should thoroughly understand the everyday problems of the farmers in his territory, then work systematically with the view of showing farmers their need of electric power. The farmer's need and his buying power are of interest to the dealer who dsires to place electric light plants where they will be of profitable service.

"Providing a farmer needs an electric plant, and can afford it, I make unusual effort to sell him," remarked a dealer. "This type of farmer makes a desirable customer. He may be a difficult customer, but after he is shown the many things which electricity will accomplish on his farm, he acquires a receptive frame of mind and eventually comes across with a check. It is a mistake for a salesman to become discouraged, and pass up a farmer before he is certain the prospect will not eventually become a customer. The dealer who is armed with facts and figures showing the economical service offered by electricity can often sell a difficult customer.

"I find information regarding the service given by electricity for both lighting and power use of value when making sales. It isn't difficult to convince a farmer that electric illumination is the best substitute for sun light. The safety, economy and cleanliness of electric lights are important arguments. I endeavor to show farmers the importance of modernizing their homes with efficient lighting systems which make for comfort, happiness and health.

"The advantages offered by electric lights for illuminating barns and other out-buildings should be brought to the prospective customer's attention. I have sold several plants to farmers who weren't greatly interested in modernizing their homes; but who appreciated the cash value of lengthening the working day by lightng the barns with electricity. Milking and feeding cows, caring for horses, etc., etc., is done safely and conveniently by the aid of electric lights.

"I find the 'safety first' slogan of great importance when making sales. Farmers appreciate the danger of fire caused by a smashed lamp or lantern. The farm home lacks efficient fire-fighting apparatus. This is why common sense demands the use of the safest means of illumination procurable. Careful farmers favor electric lights. Farm women, in particular, are easily interested in the safety first feature offered by electricity."

Versatility of Electric Plants

An electric light plant would be a desirable investment for the farmer were it adapted solely for lighting his home. When we consider the versatility of electic current for meeting the farmer's power needs we see why the average farmer can use an electric light plant to good advantage. First of all we will consider the need for electric current in the kitchen. The average farm wife has much to do. Much of the work which tires her body and wastes her time can be handled conveniently with electric motors. Washing, ironing, sweeping and dusting are a few of the jobs which electricity can handle. After a power plant is installed, running water in the home is no longer a vague dream. It can be an immediate blessing! Facts of this nature are employed by dealers who make sales. They work with the view of interesting farm women in the advantages offered by electricity. The farm wife proves a powerful ally when the dealer seeks her husband's order.

Dairy Farmer Good Prospect.

When demonstrating the different ways in which a farm light and power plant makes money for its owner, the dealer should place stress upon the need of the equipment for insuring the success of the dairy business. The electric motor is of invaluable assistance to the man who keeps cows. Machine milking is the only solution of the hired help problem. The electrically operated milking machine is giving efficient service in dairy barns throughout the country. Operating the cream separator is another profitable task for electric current.

"I consider dairy farmers the best kind of prospects," says a dealer. "They can make profitable use of electric current. I have known several instances where the installation of farm power plants assisted dairymen to get their businesses out of the rut, and to eliminate the hired help problem. When I have the name of a dairy farmer on my prospect list I make special effort to sell him. I know he will be so pleased with the equipment that he will recommend individual electric light plants to his neighbors."

Two methods are successfully employed by dealers when arranging sample electric light plants for purposes of display and demonstration. The first consists in installing a plant in the show room where interested parties can inspect it, and see how easily it is handled. This is a good method of display; especially when the plant is located near a show window.

Some dealers prefer to locate a sample plant on the rear end of a motor car or truck, then drive to the farms of desirable prospectors, offering them first information regarding the construction and operation of the plants. "I like to take a sample plant to a prospector's farm and show him all the interesting points about the equipment," said a dealer. "I think my method is desirable, I know I have increased my business through personal solicitation."

It is important for the salesman to inform farmers of the fact that he can supply different sizes of electric plants, and for this reason can exactly meet their requirements.

When a farm-light and power plant is properly installed, little service is required on the dealer's part He can offer suggestions regarding the equipment needed by individual customers, including the various accessories which permit the owner of the plant to enjoy the full advantages of electric current.

Competent service makes satisfied customers. As the dealer's list of satisfied customers increases, subsequent sales are frequent and easily made.

What Makes a Good Vulcanizing Business?

By F. DE HORITY

A CORDIAL welcome will always greet the coming of a good business man into the vulcanizing field, and success is reasonably certain if he applies his whole energy and ability to the undertaking.

The profession of vulcanizing and tire repairing is a merchandising proposition pure and simple, and it is particularly fascinating and to the successful will bring substantial remuneration.

In the establishment of a shop the first thing that is essential is to secure employees on whom you can rely. They should be experts, for expert workmen are cheaper in the long run than poor mechanics.

In the operation of your establishment, you will have a triple duty to perform. Your duty to your customers, to the manufacturer and to yourself. Bear in mind that you must serve your customers efficiently and to do this you must be in a position to secure from the manufacturer the latest and most up-to-date methods and materials for the carrying on of this work. Then, too, you have a duty to yourself, namely, to make money.

In order to do this, it is absolutely necessary for you to perceive the various operations entering into the successful management of your business, such as good service, good financing, etc.—all those things should go toward bringing success.

Service Chief Thing.

The chief thing that you will have to merchandise will be your service. This is a mighty important item and your means of getting it before the public demands careful consideration and attention.

The nature of your business demands enthusiasm, and your whole problem will be to build confidence in yourself and your work among your prospects. It is up to the repairman to establish himself and to show the people that he is entitled to their confidence, and this can only be done through service satisfactorily rendered.

Just as soon as the customer comes into your shop, greet him cordially and do not let him stand around unnoticed. Learn his wants and cater to him willingly and courteously. This service will bring him back again and thus your business will increase. Your own reputation will spread exactly in proportion to the degree of service you render and your profits will grow accordingly.

Endeavor to keep your work at all times uniform and up to a high standard of excellence. In order to do this, you will have to have good workmen and the best of material.

Have Definite Policy.

You must have a definite policy toward your customers in your treatment of them. All of your employees should understand and thoroughly appreciate this policy. In making repairs for your customers, build in service that will cost less than a new tire per mile and show these customers wherein this service will mean more mileage and economy.

Let it be known that your shop is a place where values are given, that your materials and workmanship are exclusively the best, and that you stand back of your work and guarantee it. When you have finished a job for a customer, bear in mind that your service for him does not end there. Not until he has paid for and received complete satisfaction from the job is your work entirely done. Let him know that this is your policy.

Educate Customers in Care of Tires.

Another highly important factor in your merchandising principles should be the education of your customers in the idea of conservation and care of their tires. Your own business will grow faster when car owners and truck operators learn that they should not wait until the tire fails absolutely before having a repair made.

Consider how much more business the repairman will transact with his customers if they understand how tread cuts, rim cuts, and other injuries lead to premature tire trouble and lost mileage—and if they know how tire mileage can be strengthened by preventative repairs.

They will come to you more often if you will arouse them to the important value of such repairs. Talk tire savers to them and give them the benefit of your own tire knowledge. Explain how injuries develop and how the various tire savers prevent this development. You will increase your own profits by the sale of these tire savers, and secure a great deal of additional repair work which you can handle expeditiously and secure a good margin of profit.

Avoid overstocking, but buy a sufficient quantity of materials to meet the demand of your work for a short period and then stock up again. In this way you will not have a large amount of capital tied up in stock and can be assured of more frequent turnovers.

One of the most important points to be considered by the repairman is the appearance of his place of business.

You can readily realize how a shop that is well lighted, well ventilated and neatly arranged, is going to be more widely patronized than the shop where dust and dirt are allowed to accumulate.

Absolute cleanliness is particularly essential to the conduct of a good business in any undertaking, and applies to a repair shop in particular. The saying "cleanliness is next to godliness" is indeed applicable to an individual's business as well as to the individual himself. It is not enough that the outside of your business be presentable. You should take a vital interest in the appearance of your shop. Wash the windows often, and put in an attractive display illustrating your materials and your workmanship.

Your work rooms, too, should come in for their share of the cleaning process. Have a place for everything and everything in its place is a good principle to follow.

The man who conducts an ill-lighted, musty shop can never expect to attract business to his doors. There is no reason why the motorist should stop before his establishment, for it is repellent to his sense of neatness, and certainly holds no appeal.

On the other hand, consider how the neat and attractive shop would draw trade. A good sign above the door, the windows clean and attractively arranged —the interior light and airy and presenting an appearance of prosperity—no wonder such a dealer is doing a good business, for he knows his trade.

Keep your shop in order at all times. Be neat yourself and insist upon your employees following the same principle—you'll find it will pay.

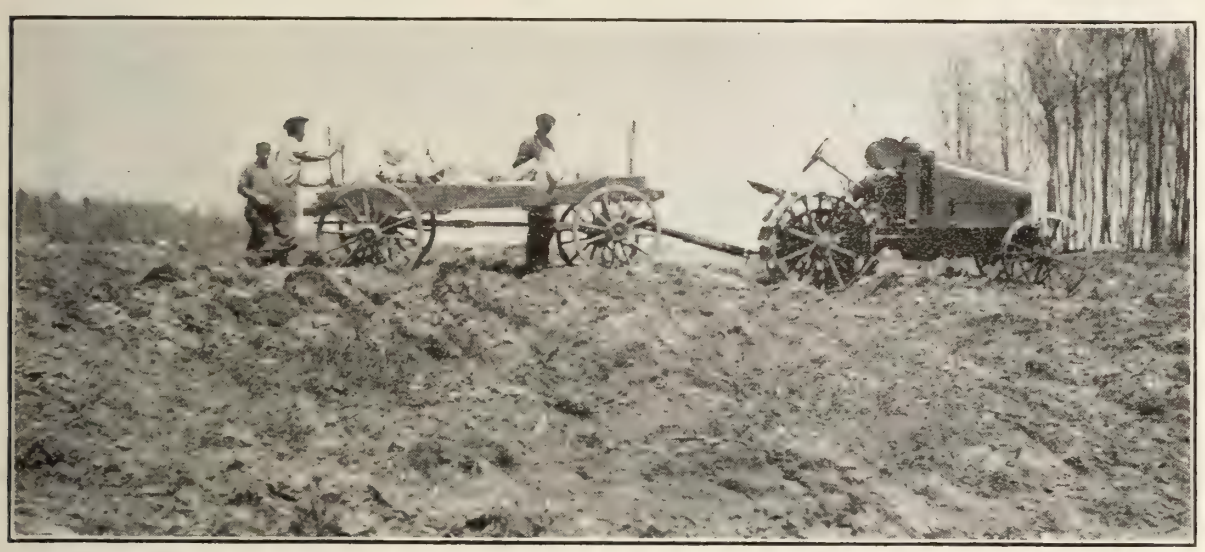
Analyze Your Territory for Tractor Sales

Under Present Conditions, the Tractor Dealer Cannot Afford to Overlook a Single Prospect. Should Go Over His Territory with a Fine-Tooth Comb to Locate Every Man in Any Business Who Could Use a Tractor

By ARNOLD P. YERKES

ARE YOU one of the dealers who has complained that farmers are not buying tractors this year? If so, are you basing your opinion on theory or fact? Of course you will answer, on fact; but don't be too hasty because some dealers who thought they knew the actual conditions of the tractor business this season, have found out that they had misjudged, and that there was some business after all if the dealer looked for it in the right place and in the right way.

In some cases this discovery was made because a competing dealer was selling tractors where the pessimists had believed that no tractors could be sold. In other cases, dealers have simply made up their minds that they would not sit down and admit defeat until they had made a real effort to sell and when they got out and went after the business aggressively they were frequently surprised to find that there was a great deal more business to be had than they had even dreamed of.



The tractor is as useful on the roads and clearing land as in the fields, plowing, discing, etc.

Tractors are being sold this year in spite of what some pessimistic dealers may think. In quite a good many cases they are being sold right under the very noses of dealers who stated there was no tractor business and would be none this season.

The fact of the matter is that a good many tractors can be sold this year if a real effort is made by the dealer to locate prospects and to sell them.

It is true that the prices of farm products are low, that it is difficult in many sections to borrow money, and that there is a tendency on the part of many farmers to put off buying machines in the hope that prices will come down even though they have the money to buy.

Nevertheless, there are enough farmers who sold their crops at good prices last year, and who have the available cash or credit to purchase and who can be made to see that it is really to their interest to buy a tractor this year rather than to wait until next season in the hope of making a slight saving on the price.

Of course, these men are not going to come to the dealer and tell him just how they are situated. He must locate them and do the selling.

Locating Prospects.

Locating such men is not always an easy task to be sure, but it is not as difficult as some dealers imagine. The dealer who has made it his business to form a wide acquaintance among the farmers in his community, which is something every good dealer should do, is in a position to locate a number of such prospects, but he should by no means depend entirely upon personal visits to locate them, although this method should by all means be employed so far as practicable.

However, this is one year above all others when full use should be made of advertising in every form. Ads in local papers will probably help considerably and should by all means be used. If the right kind of copy is used in such ads, it is almost a certainty that at least some farmers will be induced to visit the dealer's place of business in order to look over the tractor which is advertised. Such men may not and probably will not say that they have come in to see the tractor. They will probably enter the store on some pretext or other for the purpose of obtaining the opportunity to inspect the tractor at first hand.

There should be no need to repeat what has already been said a great many times and what every good dealer knows, viz., that a sample machine should be kept on display where it is easy for customers to look it over. It should not merely be set up where it can be seen, but should be kept dusted off and in such condition as to make as good an appearance as possible. It should not be allowed to collect dust and dirt so that a farmer would hesitate to climb onto the seat for fear of soiling his clothes. On the contrary, it should be placed where it will be easy for him to get onto the seat, which is one of the first inclinations on the part of a tractor prospect upon looking at a tractor, and if it is the right kind of a machine, the feel of the steering wheel and levers under his hand add to his desire to own and operate the outfit.

Advertising.

No dealer should take the position that there is no tractor business in his territory until he at least has given ads in his local papers a fair trial. A great many dealers who have used such ads this season have found that they pay well and have been the means of bringing prospects to the store who later bought.

But an advertising campaign of this kind is by no means the only method which should be used. Mailing catalogues and descriptive literature of the tractor to men who are believed to be possible prospects can be done at comparatively slight expense and often with excellent results. By this means, the dealer is assured of reaching the very men he desires to influence, whereas advertisements in the local paper are of a more general nature and while they may reach a number of prospects whose names he does not even know, they may fail to reach the ones he has in mind. The direct mailing campaign, therefore, has its advantages and is too inexpensive to be ignored. Even though such a mailing campaign fails to induce the prospect to visit the store and inspect the tractor, it is sure to at least acquaint him with the outstanding features of the tractor and if followed up by a personal visit, it may be found to have been a real help in making a sale.

While it is obviously useless to place on a mailing list the names of men whom the dealer positively knows cannot or will not purchase a tractor, nevertheless it is better to have on the names of some who will not purchase rather than omit some possible prospect. Hence, those concerning whom he is in doubt should be placed on the list rather than omitted.

Preparing Prospect List.

In preparing a list of prospects to whom literature is to be mailed, the dealer should cover as large a territory as practicable and use every available means of ascertaining the names and addresses of prospects with whom he has no personal or business acquaintance. Nor should he restrict his efforts in this direction entirely to farmers, for a great many tractors are being sold to men in other lines of business than farming. It not infrequently happens that a land owner who is renting his farm purchases a tractor in order to insure having his tenants get the crops in on time or do more thorough work than they have been doing with horses.

The possibility of selling tractors for road work should always be kept in mind because a great many are already being used for this purpose and many more could be used to advantage. Furthermore, the possibilities of the internal combustion tractor for use in connection with many kinds of business in towns is by no means fully realized by the majority of dealers. The use of this form of power by contractors who have excavating or grading to do is becoming more and more common and is destined to increase very considerably because tractors are not only well suited for this kind of work but are usually much more economical than horses since the average contractor has work of this kind only intermittently and the tractor costs practically nothing when idle, while if horses are used, their expense continues, whether working or idle.

Under present conditions, a live dealer cannot afford to overlook a single prospect. He should go over his local territory with a fine-tooth comb.

The Arctic Ice ompany, of Winnipeg, have found the tractor profitable in hauling ice from the Red River. This one is drawing half a dozen bob-sleighs fully loaded.

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Tractor and the Horse

VARIOUS interests, desiring to perpetuate the use of draft horses, so far as that is possible, have for some time been carrying on a vigorous campaign of propaganda and publicity.

They have tackled the job they set before themselves with all seriousness, with a considerable knowledge of agricultural conditions, and of farmers moods and whims, but, they haven't succeeded in arresting the onward march of power farming.

The United States department of agriculture has issued a report on an investigation in regard to the use of tractors which answers one of the big contentions of the tractor critics. The horse advocates have stated that many of the tractors sold in the past ten years have been scrapped, or are lying unused in the fields or barnyards. The inference being that most tractors sold have failed to give satisfactory service, and have been abandoned. But this report, issued by a neutral authority, shows that of 1,219 farmers questioned in regard to tractors purchased anywhere from four to ten years ago, only a small percentage made no use of tractors in 1920. The large majority, at the time when the enquiry was being carried on, were either using the first tractors purchased by them or had bought new machines, and the larger number were still using their first tractors.

About one-half of the machines purchased in 1916 and 1917, one-third of those purchased in 1914 and 1915, and one-fourth of those purchased in 1913 or earlier, were still being used for field work.

At the time of making their early reports, 74 per cent of the men believed their tractors would be profitable investments. Eighty-two per cent of those who used their first machines for field work in 1910 still considered that they were profitable, and 83 per cent stated that they intended to buy others when the ones they were then using wore out. Sixty per cent of those who have sold their first tractors and purchased others, and only 32 per cent of those who have sold their first tractors and have not purchased others consider that their early machines were profitable investments. The men who had purchased new tractors had owned them about one and one-half years, on the average, and estimated that they would give about five and one-half more years of satisfactory service. Eighty-nine per cent believed that the new tractors would be profitable.

On the average, the men who were still using their early tractors for field work had owned them about four and one-half years; in this time they had spent $187 for repairs—about $40 per year—and they estimated that the machines would last five years more.

In 1917 and 1918, when these men gave the first reports of their experience, they had increased their acreage by an average of 14 per cent since the purchase of their tractors, and at the same time had reduced the number of work stock kept by about 20 per cent. There had been little further change either in acreage or number of work stock on the farms where tractors were still in use in 1920.

The Fargo demonstration is another convincing proof that the tractor is an economic necessity on the modern farm; the records show that the horses were slow and did not have a chance, in the great heat that prevailed, with the tractors. Another point demonstrated was that horses are not able to stand up in extremely hot weather for five of the horses died from the effects of heat. Plowing, discing, etc with horses was too expensive under the conditions which were encountered at the demonstration. Actual figures of the supervising committee of the demonstration show that it costs $1.279 per acre to plow and prepare a seed bed by tractors, and $2.41 to do the same work with horses, under farming conditions, plowing 5 inches.

Win Two Dollars

TO ENCOURAGE the exchanging of ideas among its readers, M. T. I., with the September issue will start a new department. For the best article on a given subject we will pay $2 and for every other article published we will pay $1. Unused articles will not be returned.

M. T. I. will select the subjects, and in order to give ample time for every reader to compete each subject will be given two months ahead. Last month we announced the subject for September —"HOW BEST TO FIND LIVE PROSPECTS"—and would ask those competing to have their articles on our desk no later than August 25.

The subject for the October issue is: "HOW BEST CAN THE DEALER SECURE PUBLICITY."

Articles should not exceed three hundred words. Write plainly on one side of the paper, in simple language. Put it in any shape; we will fix it up for you. Be sure to give your name and complete address. Mail articles to Editor M. T. I., 143 University Avenue, Toronto, Ont.

Are You Pushing Accessories ?

ROBERT A. Stranahan, president of the Automotive Equipment Association and president of the Champion Spark Plug Co., Toledo, at the recent convention of that association at Mackinac Island, told the convention of a trip he made through three states, travelling as an ordinary tourist, to find out whether dealers and garagemen handling accessories, would make an effort to sell him anything, in the line of accessories. He made about 50 calls each in Florida, New York and Ohio, driving, successively a Locomobile, Overland and Ford. All the cars were bare of accessories. He stopped at the various places for gas and oil, overnight storage, etc., and in no case was he asked to buy anything he had not enquired for.

Such a statement on the face of it seems hardly credible. Yet it is true. And it is also true in Canada.

Dealers don't seem to realize the great possibilities for accessory sales. They allow a motorist to call for free air, and go away again without enquiring about his tires. They fill dozens of gasoline tanks each day and make no effort to find out if the motorists need oil. There never was a field which offered such opportunities for sales and for building up a large business as does the accessory trade. Every motorist who comes near a garage if he is approached properly can be sold something. Yet the average dealer makes no effort to secure this business evidently satisfied to wait until the customer asks for a specific article.

This holds true oth in the large cities and in the smaller towns.

A Toronto jobber told M.T.I. of a well known and nationally advertised device for registering an engine's performance which in the United States is installed on 80 per cent of the cars in use, while in Canada less than 10 per cent of the cars have been equipped with it. Other instances could be given to demonstrate the fact that there is accessory business to be got if only the dealers would go after it. In a country like Canada where one person out of every twenty-four owns an automobile it is to be expected that there should be a steady sale for accessories.

The main problem before the accessory dealer today is to sell, not merely to have on hand those articles for which his customers may call. He must put up a persistent and intelligent fight for business, because the business is there and he should get his full share of it.

Here's a Tip

AN Automobile dealer and repairer in Chicago, recently, made a scoop in accessory sales by a method which marks an advanced stage in aggressive merchandising and goes to prove that sales are there for the making.

This dealer has a large car storage business and conducts a day and night service. One night recently he instructed the night foreman of his garage to install on forty cars, that were then in overnight storage, a certain piece of equipment and to have the cars ready for the owners in the morning.

When the motorists called in the morning for their cars they, of course, discovered that their cars had been supplied with an extra piece of equipment. It was explained to them that they could try out the equipment and, if they were not satisfied with it, it would be taken off and on charge made. Thirty-two decided to accept the equipment without more ado, the remaining eight asked that it be taken off. In the course of two weeks time seeing that their friends were perfectly satisfied with the device and considered it an advantage, practically all of the eight had it reinstalled.

Now don't you think there is something in this for you? Discretion will have to be used in adopting tactics of this nature but we feel sure a great deal could be done along this line to increase your accessory sales, and at the same time add to your list of satisfied customers.

Try it.

Efficient Repair Work

IF automobile repairmen would make a thorough inspection of a car after repairs have been made there would be less dissatisfaction among owners and a corresponding increase in the repairman's business. When a car leaves the repair shop the owner, as a rule, inspects the machine very thoroughly, and if he finds something wrong, which may have no connection with the repair, the man who did that repair will go down considerably in his estimation as a workman.

The repairman should be careful when doing a job that he does not derange some other small detail of the car. However well a job may be done the repairman will get no credit for it, if in the process, some other unit is disconnected, or put out of business.

It is difficult to guard against troubles of this kind but it must be realised that it is a serious source of complaint.

The only sure preventive is a thorough and efficient inspection of the car, after the repair work is done. The repairman should satisfy himself that the car is in good condition and all fittings etc, apart from the repair, exactly as they were when the car was put under his care.

This will insure satisfied customers and will conduce to good business.

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Modern Electric Equipment in the Garage

Science Displaces Guess Work in the Modern Service Station. Exact Means of Diagnosing Electrical Troubles are Placed in the Hands of the Garage Man

By J. C. MILLER

Electrical Engineer, Joseph Weidenhoff, Chicago

BARELY 11 years have gone by since the first electrical equipment was applied to the automobile in the shape of the starting motor. Before this, the magneto had been in use, but the storage battery, the generator and the starting motor were added to the equipment, but these few years ago. With them came a new line of troubles and today, 90 per cent of the causes of failure of the automotive vehicle are due to electrical causes.

In the early days of the automobile, the machinist made the best repair man. He was expert on bearings and in fitting, and these were the all important points in those primitive days of the industry. Then, the machine hand had been accustomed to these troubles and knew best how to cope with them. Electrical equipment came and the machinist was left high and dry, surrounded by his machine shop practice, but deficient in electrical knowledge.

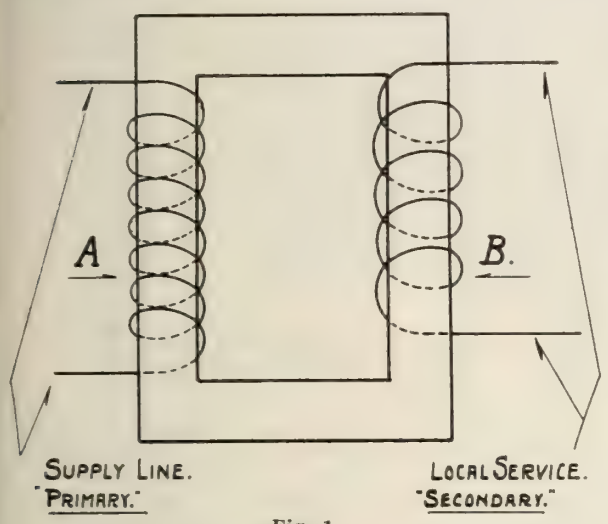


Fig. 1.

There came a demand then for men equipped along electrical lines. Schools and training camps were opened for the instruction of men in starting, lighting, and ignition practice, and many of the students thus equipped have been absorbed in the industry. There is still a great demand for the heady electrical expert. He should be one who can make an analysis of the electrical equipment of a car in a balky condition and can put his finger on the trouble with a minimum expenditure of time and expense. The strong ignorant operator of former days has no place in an up-to-date high-class service station, and he should be relegated to the stone quarry. The scientific operator, however, appeals strongly to the car owner, who has respect for gray matter, when properly located, in a man's brain pan.

Of two service stations, the one conducted by the expert wins and attracts over the station which is presided over by the mechanic whose equipment consists of an over-growth of muscle and a surplus of monkey wrenches.

Garage Practice—Old and the New

Trouble with a car is much like trouble with one's body. When we are sick, we know it and we go to a surgeon or a doctor in whom we have confidence. This doctor makes a careful examination, first, and he is backed by education and practice. He does not locate our bodily ailments by reaching for the longest scalpel in his kit and amputating right and left until he finds something which looks like a cause. First, he makes a diagnosis, then a consultation, after delicate tests have been made, and then, he reaches a conclusion. In olden days, when science was lacking, the universal custom was to bleed every patient. Science has stopped this, however. In the service station, we have little respect for the operator who works in a similar way to the old surgeon, and grabs the largest wrench he can use and amputates right and left, just as the surgeon would do. He blames the carburetor, the spark plugs, and the breaker, and has them all out before the trouble is located, and like the surgeon of old, he does a little bleeding of a different character to the unfortunate car owner.

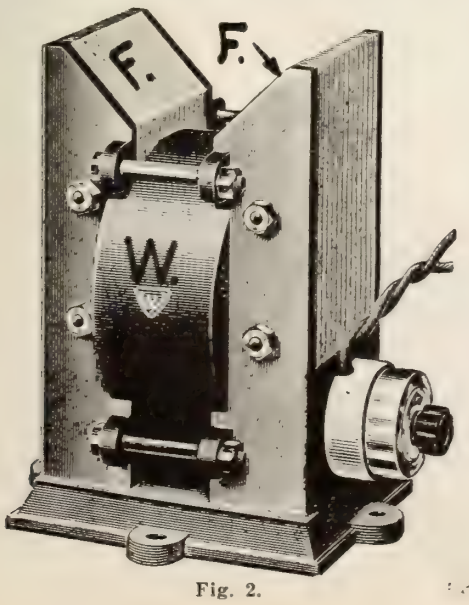


Fig. 2.

The day of such an operator is fast going by. Equipment and education have put into the hands of the service station man, exact means of making a diagnosis of electrical troubles to be followed by a remedy in the shortest time and with minimum expense. To illustrate the progress made along these lines, let us go into the devices that have been provided to test an armature of a generator or a motor. Many a good armature with a slight fault may be easily repaired by the expert of today, which in days gone by, would have been sent to the factory, of the maker, and a new one substituted for it. Now, in a brief time, and with slight labor, many such armatures may be saved.

Let us look into the science of the method of armature examination as it is now being conducted by the ignition expert of today by means of the armature testing device called the "growler". This device consists of a coil of heavy wire wound about a laminated core of electrical sheet steel. The coils of the armature act as the secondary winding of this transformer.

Principle of the Transformer

In order to understand the principle of operation, the reader should know of the basic principles of the ordinary transformer so commonly seen mounted upon the poles of our transmission lines. This device steps up or down the voltage and current that is to be used by the consumer. Referring to the drawing, Figure 1, it will be noted that this transformer consists of a primary coil marked "A" which receives the outside supply voltage. The circuit of this coil is always closed, but current flows in it only when the secondary winding, which is marked "B" is closed and current is being drawn from it. These coils, the primary and secondary, are wound about a core of laminated sheet steel, and when an impulse of alternating current passes through the primary winding, a flow of magnetic lines takes place in this core alternating in direction, as rapidly as the voltage alternates in the primary winding. The magnetic lines flowing in the core, act upon the secondary winding and induce in it a voltage corresponding in time and alternations with the changing magnetic lines of the core. This is the secondary voltage, and its intensity is to the intensity of the primary voltage as the number of turns of wire in the secondary coil is to the turns of the primary coil. The power of the secondary side is equal to the power expended in the primary side, decreased by the losses which take place within the coils, due to the resistance and eddy currents set up in the coils. Such, in simple terms, is the construction and operation of the transformer.

The electrical expert has made use of this transformer principle in the device which is now being placed in many a service station for the examination of armatures and the detection of faults which may arise in these armatures from various causes. One of the earliest forms of this apparatus is shown in Figure 2, which has undergone many improvements since it appeared in its primitive form. It consists of a winding marked, "W", which is mounted upon a laminated steel core. Upon the incline faces of this core, F, F, the armature, under inspection, was placed, and when the coil was connected with a source of alternating current, there was induced within the coils of the armature itself a voltage and current which bore the same relation to the voltage and current of the coil as the turns of the armature bore to the turns of the coil. This device operated as is shown by Figure 3. It will be noted in this figure that the coils of the armature are represented as being about one side of the magnetic core, for the steel body of the armature makes up the complete magnetic circuit. There is generated, then, in the coils of the armature a voltage just the same as there is in the secondary of the transformer of the transmission line, and if we are provided with instruments delicate enough, we can tell if these coils are in perfect condition, or if some of them are short circuited, in which case, much less voltage and current will show at the commutator bars of the short circuited coils.

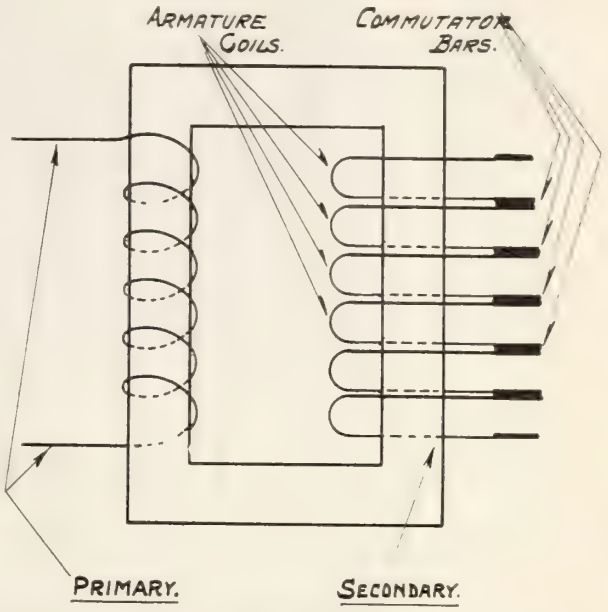


Fig. 3.

With the armature tester, illustrated in Figure 2, faults such as a short circuited coil could be easily detected, for if a thin piece of sheet steel were held above a slot of the armature in which a shorted coil was placed, this steel would rapidly vibrate and would indicate this fault of the coil. Likewise, by means of a lamp passed around the commutator from segment to segment, some variations in voltage could be detected, but many faults could occur in armatures which were impossible of detection. Starting armatures were stumbling blocks in the detection of troubles for their windings were so few and the voltage induced was so slight that the judgment of the operator was not sufficient to detect such a trouble as a shorted or a reversed coil. There has recently been devised and placed upon the market an armature testing device shown in Figure 5 which enables the expert to place his finger definitely upon an armature fault in the shortest possible space of time. Referring to Figure 4, which illustrates the electrical connections of the newer tester. it will be noted that there is a means of controlling the amount of current which is permitted to travel in the primary coil. This is very necessary when the wide variation in the number of turns of wire on armatures is considered. We may have the starting armature which consists of but a single turn of very heavy wire to a coil,

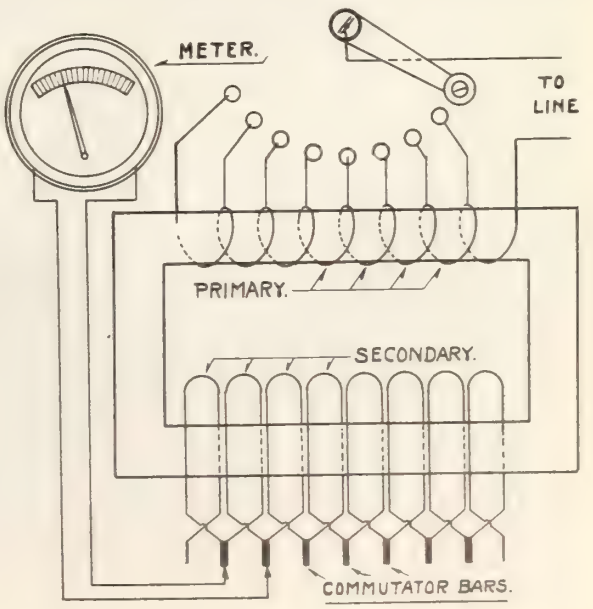


Fig. 4.

while the armature of the generator has many turns in its coils. By manipulating the switch on the primary side of this armature tester, the voltage generated within the coils of the armature may, therefore, be rendered nearly constant, irrespective of the windings.

Another improvement that has been added is a means of indicating to the operator the amount of current being induced in the coils of the armature. A pair of contact points is held permanently in contact with the same positioned commutator bars of the armature, and these contact points conduct current to a meter which is carried at the rear of the device. A ratchet device locates the successive slots in the identical position one after the other, and when an armature is placed upon the pole pieces, a reading may readily be made upon a complete armature, investigating every coil in a very brief space of time.

The connections between the commutator bars of the coils and the meter are illustrated in the diagram Figure 3.

Some Armature Faults

Faults that occur in armatures and subject to detection are;

Grounds, Short Circuits, Open Circuits, Wrong Connections, Reverse Coils, Loose Connections.

A ground results when there is an electrical connection between a coil and the body of the armature or the shaft. This is readily detected by the fact that a light can be made to burn by touching the commutator with one of the test points of the testing device while the other test point is in contact with the shaft. The armature tester, above shown, is provided with a test lamp and two test points in series with each other and the lamp connected to the 110 volt circuit. This is the simplest of all tests and, sometimes, the most difficult to find the cause.

A short circuit means that some of the coils of the armature touch each other and so the full force of the voltage and current will not be found at the commutator bar. When readings are made about the armature one bar will be found which will read low upon the meter. This indicates that a part of the current being generated does not pass through the meter, but finds a shorter path through the coils. The faulty coil will be the one which is connected to the commutator bar giving the low reading on the meter.

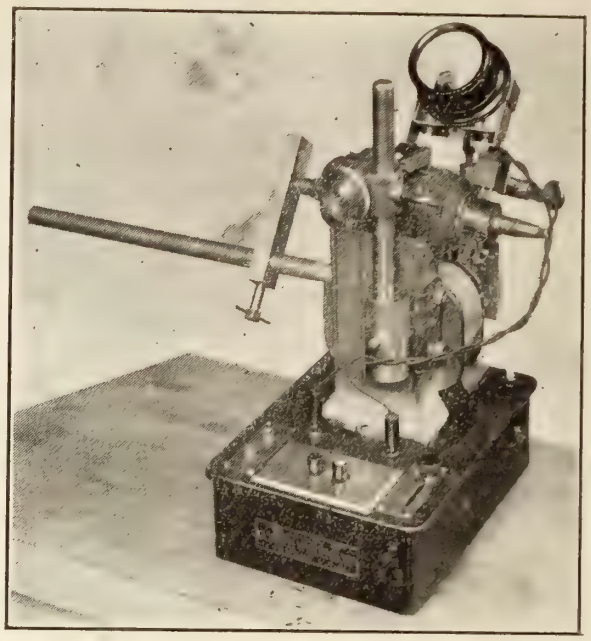


Fig. 5.

An open circuit in the armature is indicated by a low reading on the meter. The reading will not be reduced to zero, as one of the coils may still be contributing its current to the commutator bar. The coil, which is open, will likewise be the one connected to the commutator bar, giving the low reading.

Wrong connections are indicated as well as reversed coils, by zero readings on the indicating meter. If the coils are reversed, then the current in one coil is neutralized by the current in the other, and the result is that no current shows upon the meter.

Loose connections are shown by low readings upon the meter. These readings will be slightly lower than the normal reading should be, showing that the extra resistance of the poor contact hinders the passage of some of the current.

With the device, such as described above, the ignition operator has for his use a tool by which he can make an accurate analysis of any fault that may occur in any armature and the exact location may be ascertained before any labor has been expended upon the armature or any steps taken to destroy any of the windings. Many times, the use of a pen knife may remove a particle of copper from an offending coil and the armature rendered as good as new, simply because the use of tools was guided by a scientific investigation of the condition of the armature.

Power Farming Critics Well Answered

J. B. Bartholomew, Chairman of the U. S. National Tractor Committee, Analyzes Farmers' and Horse Breeders' Objections to the Use of Tractor

AMERICAN and Canadian farmers are the most careful buyers in the world. Farmers interested in tractors must have every question answered and every objection met and tractor manufacturers are very glad that this is the case because the tractor is either all right, and, like the automobile, does what is expected of it, or else it is all wrong and an economic mistake. No halting nor half way position is possible.

To get at the bottom of this question one of our leading farm papers asked its subscribers what they thought about tractors. Some of these subscribers owned tractors, others did not. And some favored them while others criticized them.

The favorable comment is so general and well known that I will not dwell on that but the unfavorable comment and the objections, as they come in from the field, are worth careful analysis.

For convenience I have classified these under four general heads: Finance, which includes expense and depreciation; character of land; the place of the horse, and is the farmer mechanically able to operate the tractor successfully.

The first objection is lack of finance and this strikes, one not as an objection to the tractor and not even true, except in a limited number of cases. But it might be considered a slam at the biggest industry in the country—farming .

Finance is a question that confronts every activity and is really the question confronting the farmer and everyone else when they are considering the purchase of anything that they might want.

Therefore, this objection does not apply, generally, nor does it tend to condemn the tractor. Neither can it be applied to farmers who are able to finance their tractor purchases.

When the farmer sums up his resources, he will find it exceedingly easy, nowadays, to finance tractor purchases.

The thing to consider is—*What will it do*? *What will it save*? *What revenue will be derived*? Then make an investigation and see what can be done and reach a conclusion after you have interviewed the banker, the local agent, the manufacturer's representative, and others who might be interested in affording a solution to the financing question. Several institutions have already been formed to meet such requirements.

Fifteen years ago, two factories located in close proximity were considering the installation of a sprinkler system. It was figured out that in four and one-half years the saving in cost of insurance would pay for the installation. One of these factories installed it immediately. It paid for itself in four and one-half years and it has paid for itself twice over since. The other factory said they could not finance it,—it was too costly. They still haven't got it, while they fully realize their false economy.

Buy a Tractor and Use It

A good many farmers are in a similar position. They don't own tractors but they have paid for them several times over.

Of course it is not always the first cost that keeps a farmer from buying the tractor he needs. Some farmers say they are too expensive to operate or that their farms are too small or that the life of a tractor is too short and depreciation too high. But these objections will not hold when they are carefully analyzed. For example: On this question of depreciation, tractors in proportion do not figure out to be any more expensive in the first cost than other lines of improved farm machinery. This is especially true when you take into consideration the higher grade of some of the materials and the finer workmanship employed in their production.

We sometimes hear that land is too expensive—too high in price—and it certainly would be if it were not for the modern farm implements available with which to work it. How much worse off would the owner of the

A Study in Contrast. Four horses working alongside a tractor, doing the same work in the same field. The receent Fargo demonstration showed that the horse, subjected to sever weather conditions, was no match for the tractor.

Many thousands of tractors in Canada and usefully and profitably employed filling silos

high priced land be if he had all of the implements with which to work it economically and profitably and did not have available proper power with which to operate the implements or the belt driven machinery incident to up-to-date and economic operations.

There is no implement or machine on the farm, unless it be the automobile or the truck, that is so much used during the year as the tractor when once adopted.

Many say that the time saved by the use of the tractor justifies its cost, without figuring any of the earnings or the more economic way in which it will do the work.

Plowing at the right depth at the right time; making the proper seed bed at the right time; seeding and planting at the right time, all more or less made possible by the use of the tractor are regarded as elements that justify the farmer in owning, and maintaining them. These statements are made by successful farmers.

With the tractor it is not necessary to start plowing or doing any of these farm operations when the soil is not in prime condition. Therefore, better crop yields and that too, without drawing any more on the soil fertility for the eradication of weeds, is more cheaply and more successfully accomplished. by plowing at the right time.

Of course, you can plow at the right time with horses, but in order to get the full season's use, on account of the capacity, it is necessary to start before plowing conditions are the most favorable, and continue throughout the season in order to get the work done, resulting in the first plowing bringing forth a multiplicity of weeds to combat, while the first and the last plowing requires more work to make a proper seed bed.

The eradication of weeds is important. It probably is no greater drain on the soil fertility to raise a stalk of corn or a stool of wheat than it is to allow weeds to grow in their stead.

Timely Work With Tractor

In some sections where the period for planting crops, for instance oats, is short, you can plant them too early or you can plant them too late for best results. The tractor affords a means by which the work can be started at the right time and finished before it is too late. The increased horse power enables a better seed bed to be made within the period. More or less the same conditions exist in the preparation of the soil for a corn crop. If the plowing is started before the weeds start in the spring they will simply come up after the ground is plowed, therefore, it will be necessary to combat them throughout the season. If the ground is allowed to lie until the weeds have started, the plow is the most effective means of destroying them. The only way that weeds can be eradicated is to let them start and then kill them. As long as the seed is in the ground and has not yet germinated it is sure to bring forth weeds sooner or later. Forty years of experience discloses the fact that many times much of the land is plowed too early or too late, or the seed bed has not been properly made to get the best results, and throughout the cultivating season weeds are fought that ought to have been destroyed before the planting took place.

These questions are all well understood by the farmer, but the idea of calling attention to them is to bring out the fact that the tractor, with its increased capacity, can, and will, supply the power to perform all of these operations in the right way, at the right time.

The expense or cost of anything should be figured on a basis of what it does in comparison with other methods. No farmer will be justified in going on paying for a tractor by the employment of more expensive methods and finally find he has no tractor, and has lost more than the cost of it in savings, benefits and revenue. Such practice is like paying for a farm in rents while the landlord continues to own it.

Suppose we should say it is too expensive to farm, yet we know farming must go on in order to feed our people A very large percent of the people who engage in any or all of the business activities fail of success, according to the reports of the two most prominent Commercial Agencies.

The wise and energetic, determined, go-ahead fellow is not going to be interested in what the 95 per cent who failed did or did not do. He is going to see what the 5 per cent that succeeded did to promote their success.

The farmer who succeeds the best is the one who is going to look ahead, keep his farm in the best shape for crop production, cut the corners in the cost of production, and promote increased yields.

The soil needs aeration, it needs heat and it needs moisture to produce crops, therefore, during the hot season the land should be plowed whenever it is possible to do so, and this is always the time when horses can do the least. Later, when the Fall rains come your soil is in fine condition to receive and retain that moisture.

If a Fall crop is to be put in, the seed bed is more easily made and the seeding more properly accomplished and larger yields are sure to result.

The tractor likes to work in hot weather and is not bothered by flies or insects.

Fuel oil and lubricating oil have been coming down in price—they will probably be still lower as the re-adjustment period proceeds. These elements that are utilized in the operation of the tractor are not food for either man or beast.

How can the cost of operation be figured too high when you consider the extra accomplishments that one man

The tractor is becoming increasingly popular in orchard work and is at home in light or heavy soil

can effect with the tractor as compared to what he can do with horses. One man with proper tractor machinery has produced from 100 to 120 acres of corn in a season, ready for harvest. One man cannot handle enough horses to accomplish this acreage.

Horses have been in general use so long that farmers do not know, or seem to realize, how much it costs to do work with them. The Government statistics say that the equal of 15 per cent of the crop raised by the horse must be fed back to him while he is raising it in order to maintain him.

Farmers are so used to horses that they can hardly realize that they have to be taken care of three times a day, and they do not count the time and expense involved. They consider it bad luck that they have to contend with ringbone, spavin, fistulas, sore shoulders, etc. These and the veterinary's services all go into the general expense without making any proper application. Horse shoes are another thing that very seldom enter into the cost of farming with horses.

The big point, however, is that the horse goes along without much notice—the expense is on whether he is at work or not. You can't stop horse expense by turning a switch.

It is difficult for one who has not had tractor experience to realize the greater capacity of the tractor, the wider range of work that can be covered in the same time, and how thoroughly the work can be done because of a properly selected tractor. A little deeper plowing, a more thoroughly made seed bed, and a much wider range of work is accomplished by one man than can possibly be accomplished with horses, because one man cannot successfully handle a sufficient number of horses.

The life of the tractor, like the life of the horse, has not yet been very definitely calculated out on the average.

Much has been written about the wonderful work done by the tractor at the Front during the great World War. But we seem to have overlooked the great work done by the tractor in the field of our great area of fertile lands, many of which tractors were purchased before the great war was dreamed of, and a great many more purchased during the period of the war.

A 30-60 oil tractor pulling sixteen 14-inch plows in corn stubble. This span of plows turns over a strip of land 20 feet wide.

A real power farming scene. Here we see a tractor operating a thresher and a motor truck ready to haul the grain to the elevator.

Fallacies in Depreciation

Suppose you take a tractor and figure it on the basis of four years life. You charge up for the first year 40 per cent of its cost, the second year 30 per cent, the third year 20 per cent and the fourth year 10 per cent against its operation. This would be considered a liberal method of depreciation. And then you pick up a letter dated Dec. 1st, from the purchaser which contains the following language:

I purchased one of your tractors last July. I have plowed 4300 acres of land, threshed 115,000 bushels of grain. It has more than paid for itself and runs as good as new.

The above sentences and thousands of others testifying voluntarily in behalf of the tractor are available.

If we are not willing to take the statements made by the users, then we should be willing to take their actions, and if after purchasing they continue to use them, it is then evidence that they are successful.

If the farm is small, select a small tractor and farm it the tractor way. The smaller the farm, the more expensive per acre it is to farm with horses, because horse expense goes on while tractor expense stops the moment you stop operating.

You can feed a cow cheaper than you can feed a horse. A good average cow of 1000 lbs. weight will produce annually from nine to ten thousand pounds of milk. Therefore, starting with one such cow, at the end of ten years she would have produced from 90,000 to 100,000 pounds of milk (fit for the Kings and very good for children) and she will do this while feeding in the timber, up the gulches, along the roadside, and other places not suitable for being used for grain and corn farming.

After this ten year period she will, on the average go to market and sell for nearly as much, if not more than a horse, and she will leave behind her some twenty odd head of cattle and calves, one-half of which, on the average, will go on producing at an increased ratio.

That's why the banker is always ready to loan money for raising cattle. He knows it is safe and he knows that diversified farming operations are the most staple and the most successful.

Of course, the banker as well as the farmer must consider the size of the farm, character of the soil, etc. in the question of what tractor to buy and one frequent objection is that a tractor is no good on stony land; in mud and swamp; on hills and rough land or irregular fields.

To the farmer with such conditions would suggest the advisability of first redeeming such land for successful farm operations.

Tractors have been successfully employed to haul off of the land all stones that seriously obstruct farm work either with tractors or horses. They have been very successfully used in ditching, diking, and leveling land and bringing it up to a high state of cultivation.

When you farm the tractor way, the shape of the field does not interfere with the successful use of the tractor, and in loose sandy soil it is simply a question of the proper wheel lugs.

Negotiating the soft mud in the rice fields (a crop which grows in the water) the tractor with proper wheel equipment has completely out-stripped the horse and the mule, and is often seen pulling plows and negotiating such fields with water standing on them.

An incident on this point happened some years ago when a rice farmer in a receptive mood challenged a tractor salesman to bring out his tractor and follow his mule team two hours, at the end of which time if he had succeeded he would place in his hands a check for the tractor. The challenge was accepted and in forty minutes after the start was made, the mule team was mired down and had to be pulled out by other mules. The tractor waited until this performance was completed and then proceeded to plow right over the quagmire that the mules had been pulled out of. To satisfy curiosity I might add—the rice farmer said to the tractor salesman—'You're the gamest bird I ever ran across—come to the house and get your check.'

Ordinarily no farmer could make money farming in the mud, either with horses or tractors. Thousands of acres of swamp land have been redeemed by the tractor.

Tractors may not pull quite so big a load over rough, hilly country, but they are amply able to negotiate the hills in a way that will produce economical results, and that too, without attracting the attention of the Humane Officer. The capacity of horses is correspondingly reduced when working over rough, hilly country.

One hundred years ago 95 per cent of the people were on farms—today only 49 per cent are on farms. Therefore, we may take it that improved farm machinery has enabled 49 per cent of our people to produce food, not only for themselves, but for the other 51 per cent. Such a condition could not have been brought about without the improved farm machinery. This process, is still going on and the tractor is in the great scheme.

The tractor affords a means by which the work can be started at right time, and a better seed bed prepared within the period.

With The Manufacturers

W. L. Moncur represented Cutten and Foster, Toronto, at the A.E.A. convention at Mackinac Island.

G. R. Bury, general sales manager of the Packard Motor Car Company, has resigned owing to ill health.

C. G. Keyes, of Keyes Supply Co., Ltd., Ottawa, attended the convention of the A.E.A. held recently at Mackinac Island, Mich.

W. J. Drumpelmann, assistant sales manager of both the Hudson Motor Car Company and Essex Motors for four years, has resigned.

The Toronto branch of the DeLaval Company of Peterborough was seriously damaged by fire recently. The loss is covered by insurance.

The headquarters of Durant Motors Inc., is now settled in its permanent quarters in the new Gotham National Bank Building, New York.

C. F. Daly, formerly vice-president of the New York Central Railroad, has joined Durant Motors Inc., in the capacity of assistant president.

The Champion Spark Plug Co., of Canada, Windsor, Ont., were represented at the A.E.A. convention at Mackinac Island by A. J. Hayes.

The Beaver Motor Truck Corporation, Hamilton, Ont., manufacturers of Beaver trucks are placing on the market a new light delivery model.

Lamontagne, Ltd., Montreal, were represented at the Automotive Equipment Association convention at Mackinac Island recently by P. E. Joubert.

The employees of the International Harvester Co. of Canada, Hamilton, Ont., held their annual picnic recently at Wabasso park, Hamilton.

The Phelps Power and Light, Ltd., has been incorporated with a capitalization of $50,000 to manufacture and deal in electric lighting systems.

R. G. Edgecombe Co., Ltd., London, Ont., were represented at the Automotive Equipment Association convention at Mackinac Island by G. T. Edgecombe.

A. H. Alfsen, manager of the Toronto branch of the J. I. Case Threshing Machine Co., recently made a trip over the company's eastern Ontario territory.

M. D. Scott, of the Allis-Chalmers Mfg. Co., Milwaukee, tractor division, visited the prairie provinces recently. Mr. Scott's headquarters are in Vancouver.

Hyslop Bros., Ltd., Toronto, were represented at the Automotive Equipment Association convention held recently at Mackinac Island, Mich., by A. M. Bottcher.

A. M. White, of Geo. White and Sons Co., Ltd., London, Ont., has been elected vice-chairman of the Ontario Division of the Canadian Manufacturers' Association.

The Dominion manufacturing and sales rights of the Lloyd's low-down wagon seat, manufactured by the Wawanesa Wagon Seat Co., Wawanesa, Man., have been acquired by the John Watson Mfg. Co., Winnipeg.

C. E. McTavish, sales manager of the Samson Tractor Co. of Canada, Oshawa, visited the factory at Janesville, Wis., recently.

F. J. Gerrandt, of the International Harvester Company, of Canada, Hamilton, Ont., has been appointed chairman of the Hamilton branch of the Canadian Manufacturers' Association.

J. Ernest Millen, of John Millen and Son, Ltd., Montreal, automotive jobbers and distributors, attended the recent convention of the Automotive Equipment Association at Mackinac Island, Mich.

Hi-Speed tools, Ltd., Galt, Ont., manufacturers of taps, dies, and specials in small tools, recently appointed W. Bruce Campbell, Confederation Life Bldg., Winnipeg, as their representative for jobbers only, in Winnipeg and the West.

W. H. Bowman, for the past twelve years connected with the John Deere Plow Co. of St. Louis, recently resigned. Mr. Bowman has acquired an interest in and will act as advertising manager for the Arkansas Farmer and Homestead.

G. F. Gibson, general manager of Canada Automotive Products Co., Toronto, Canadian distributors of trans-Lever springs for Ford cars, was in Western Canada for two weeks recently lining up dealers to handle trans-Lever springs.

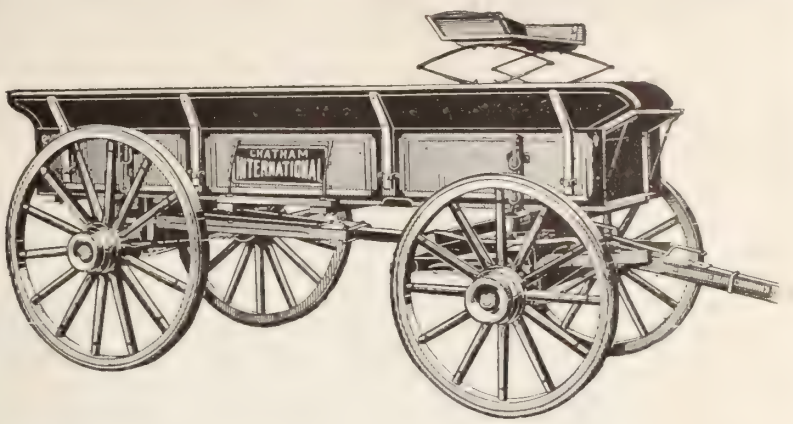
B. H. Anibal, for the past twelve years associated with the Cadillac Motor Car Company and the General Motors Corporation, has resigned as chief engineer of the Cadillac Company to join R. H. Collins, in the Collins Motor Car Company.

Bowden Bros., Toronto, are establishing a factory on Primrose Ave., for the manufacture of belt dressing, rope filler, etc. J. William Bowden, and C. Wilson Bowden are the members of the firm. The former will be sales and general manager and the latter will have charge of manufacturing.

W. G. Palmer, salesmanager of the Studebaker corporation of America, accompanied by M. F. Rigby, advertising manager of the same corporation of Walkerville, Ontario, are on an automobile tour of western Canada in the interests of the Good Roads and Automobile associations of the prairie provinces.

Robert D. Black, formerly assistant sales manager of the Black and Decker Mfg. Co., of Towson Heights, Baltimore, Md., has been appointed manager of the same company's Philadelphia branch office. Mr. Black succeeds W. C. Allen, who has been made a special representative with headquarters at the company's Cleveland branch.

C. L. Davis, formerly manager of the Milwaukee branch of the Winton Co., and for the last two years sales manager of the Overland Wisconsin Co., Milwaukee, has become associated with the Stearns Sales Agency, 156 Farwell Avenue, Milwaukee, as manager of wholesale sales. The Stearns Agency is state distributor of the Stearns-Knight and Rolls-Royce.



Make Satisfied Customers By Selling Them Chatham-International Farm Wagons

Builders of Chatham-International wagons have worked on the principle that the service which the user gets from a wagon must first be built into it.

Chatham Works carries a bigger stock of raw and finished lumber than any other wagon factory in Canada. All wood stock is seasoned in open sheds for two years. It is then placed in a dry kiln, which reduces the moisture content to the minimum. The wagon parts made from this stock are oiled and stored for six months before being assembled into wagons. This thorough seasoning means freedom from shrinkage.

Wheel hubs are made of carefully selected birch, turned, shaped, bored and mortised by automatic machines. Spokes are selected hickory and oak with square shoulders. Rims are made of straight-grained oak, shaped when green and nature dried. A solid skein collar prevents oil from soaking into the hub and loosening the spokes.

Straight-grained oak and clear, tough maple, generously reinforced with iron, give Chatham-International gears rugged and lasting strength.

The axle, hounds, and sandboard of the front gear are securely clipped together—not bolted. The long circle iron gives ample support to the bolster. The unusual length of the sandboard plate and liberal ironing of other parts are distinctive features.

On Chatham-International wagons quality goes in before the name goes on. Sell the old reliable Chatham-International and you will deliver to your customers the utmost value in satisfactory wagon service. For further information see the blockman or write your branch house.

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD
HAMILTON CANADA

BRANCH HOUSES
Hamilton, London, Ottawa, Ont.; Montreal, Quebec, Que.; St. John, N.B.

MADE IN CANADA
International

Appraisement of Used Cars

THE AUTOMOTIVE Section of the Saskatchewan Retail Merchants' Association has sent the following circular letter, dealing with the appraisement of used cars, to dealers all over Saskatchewan, which we think will also be of interest and profit to dealers all over the country:

Dear Sir,

At the first annual convention of the Automotive Section held in Regina last January, the present methods of dealing in "used cars" was discussed by the delegates present and after spending more than an hour debating the subject and giving it the serious consideration which it deserved, it was decided to leave the matter in the hands of the Provincial Committee of the Trade Section.

Their report was submitted to the Trade Section meeting held in Saskatoon on June 15th, and was approved and ordered adopted, and it was further directed that a copy of the findings should be placed in the hands of the trade——hence this letter.

The report and schedule are set out below:

Your committee find that the dealers are taking the public's word as to the value of used cars to be taken in trade and consequently there is an abnormally small spread between the allowances made and the price which the dealers might expect to sell used cars for.

In making an allowance the dealer should take into consideration the cost of putting the car into saleable shape and also his overhead in handling. **The worth of a used car is just what the dealer can sell it for,** less a commission or margin which will compensate his overhead and yield him his usual margin. At present practically no method is being employed in computing allowances and consequently, the margin realized on the sale of a new car is eaten up to a large extent in some cases, by the loss entailed in handling the "trade."

For a number of years various associations of automotive dealers, both in Canada and the United States, have endeavored to find a satisfactory solution to this evil and in some cases methods have been applied which have solved the question, but none of these could be put into effect at country points to any advantage.

We have arrived at the conclusion that the business will never be made to pay until some uniform schedule has been adopted by the trade. Investigation along these lines has resulted in the following schedule being drawn up and submitted for your approval. The allowances set out are the maximum for "used cars" in good repair less the cost of putting the car into saleable shape together with a sufficient amount to cover the handling charges and overhead. Allowances to be figured on a basis of present value of the car if new.

Schedule

Depreciation up to one year old, 30%
Depreciation up to two years old, 40%
Depreciation up to three years old, 50%
Depreciation up to four years old, 60%

Method of Appraisement—Car Three Years Old.

New car retails at	$1000.00
Depreciation 50 per cent. ...	500.00
	500.00
Less repairs, labor, etc., necessary to put it in selling shape	50.00
	450.00
Less commission	50.00
Allowance to customer	400.00

In adopting this schedule you will be assisting the trade in the Province and making the public a liberal allowance, and doing the right thing by your business in abiding by it. You are not making any money dealing in the present way, neither is the other fellow. Co-operate with your fellow dealers and thereby help yourself.

Should you not agree with the schedule arrived at, write us setting out your opinion and experiences, we want the benefit of them.

If any of the dealers in your town should not receive one of these letters, direct them to us and we will cheerfully forward one.

Yours for co-operation,
H. T. Pizzey,
Secretary to the Automotive Trade Section.

EXHIBITION TO BE BIGGEST YET

The exhibition authorities have projected plans to accommodate the largest motor show held yet in connection with the Canadian National.

Though the exhibition is still sadly lacking in the necessary permanent buildings in which a complete motor and motor equipment show might be housed, the directors seem determined to make the very best of existing conditions and to feature the automobile as it has never been featured before.

The trucks, as in 1919, will be under canvas on two acres of ground immediately south of the Transportation building. Three streets will be run through this area and it is expected the truck exhibit will be the biggest and most attractive in the history of Canadian motordom. In order to direct the public toward the equipment building, special features such as a big rose garden which will serve as a rest station for visitors, the camps of the Boy Scouts, Naval Brigade, etc., are being located in this end of the grounds and extensive work is being carried on to make it one of the most attractive sections of the big park.

The first Monday will be Automobile Day and this will serve to emphasize the automotive show held in conjunction with the Exhibition. Among the guests who have been invited to attend the director's luncheon on Automobile Day are: R. S. McLaughlin, president of Automotive Industries of Canada; R. A. Stranahan, president Automotive Equipment Association; E. H. Broadwell, president Motor and Accessory Manufacturers' Association; C. S. Hoben, president Montreal Automobile Trade Association; E. W. Hamilton, president Western Canada Automotive Equipment Association; G. M. MacWilliam, president Toronto Automobile Trade Association; A. J. Hayes, chairman Canadian Auxiliary Automotive Equipment Association; Frank Goforth, president Ontario Motor League; Capt. Duchatel de Montrouge, president of Automobile Club of Canada; Hon. S. J. Latta, president Canadian Good Roads Association and Minister of Highways for Saskatchewan; Dr. P. E. Doolittle, president Canadian Automobile Association.

It is promised that the automobile racing events scheduled for opening day and for the first Monday will be of unusual interest. Sir Haughdahl, who broke the dirt track record last year is returning and a newcomer will be Jules Ellingboe a young driver who "arrived" overnight at the last Indianapolis 500-mile race.

AUSTIN CARS AND TRACTORS AT TORONTO EXHIIBTION

Major H. J. Cupper, Canadian representative of the Austin Motor Company, Ltd., Birmingham, England, announces that the latest models of Austin cars and tractors will be shown at the Canadian National Exhibition.

In the March, 1921, issue of M.T.I., full specifications of the Austin Cars and tractors were given.

The Austin Motor Company is now committed to a permanent policy with regard to Canadian business and arrangements are b[illegible] equate service and supply of spare parts, etc.

Auto Companies Are Increasing Production

DETROIT. —Enquiry made among manufacturers of automobiles has developed the fact that business is picking up. The Ford Company of Detroit is practically down to pre-war prices and had on their books, July 23, orders for 140,000 cars and trucks. This represents the total wholesale and retail orders ahead.

Other companies have a similar story to tell. The Cadillac Motor Car Company have placed in readiness for start of production their new plant covering nearly 50 acres. The new plant provides space and equipment for production of 25,000 cars a year, without the use of night shifts.

Dodge Bros, are striving for constantly increasing output and have more than 30,000 cars on their books.

The Buick plant is behind on orders and is continuing high production.

Fargo Demonstration Records

Chicago, July 11.—The demonstration and show committee of the National Implement and Vehicle Association met here to-day and approved the reports of the supervising observers' committee covering the records made at Fargo farming demonstration.

These records include both the tractor and horse outfits, and the results are made public in accordance with the rules governing the demonstration which provide for:

1. The average record of all tractors qualifying in the demonstrations.

2. The average of tractors whose record is better than the general average of those qualifying.

3. The average of the best six records.

These rules eliminate individual tractor performance, and provide averages which fairly represent the industry as a whole.

Thirty-six tractors participated in the demonstration and plowed, prepared for seeding and seeded a total of 360 acres. Of these tractors 25 burned kerosene and 11 burned gasoline. The depth of plowing was 5 inches.

The general averages of all tractors qualifying are summarized as follows:

KEROSENE TRACTORS

Plowing

Average fuel per acre, kerosene	3.01	gal.
Average fuel per acre, gasoline	.12	gal.
Lubricating oil per acre	.11	gal.
Man hours per acre	.94	

Preparing and Seeding

Average fuel per acre, kerosene ..	1.25	gal.
Average fuel per acre, gasoline ...	.094	gal.
Lubricating oil per acre	.04	gal.
Man hours per acre	.418	

The above general averages are for all tractors in the demonstration.

As provided in the rules another average was secured for tractors whose fuel costs were lower than the general average of those given above. In determining these costs gasoline was figured at 23.1 cents per gallon and kerosene at 11.8 centts per gallon, which was the current price at Fargo, and the following results are summarized:

GASOLINE TRACTORS

Average fuel per acre	2.77	gal.
Lubricating oil per acre	.05	gal.
Man hours per acre	.95	

The averages for the six tractors, the fuel costs of which were the lowest, based on Fargo prices of 11.8 cents for kerosene and 23.1 cents for gasoline, were as follows:

Preparing and Seeding

Average fuel per acre	1.28	gal.
Lubricating oil per acre	.03	gal.
Man hours per acre	.43	
Average fuel per acre, kerosene ...	2.87	gal.
Average fuel per acre, gasoline	.102	gal.
Lubricating oil per acre	.095	gal.
Man hours per acre	.95	

Preparing and Seeding

Average fuel per acre, kerosene ...	1.16	gal.
Average fuel per acre, gasoline ...	.105	gal.
Lubricating oil per acre	.04	gal.
Man hours per acre	.42	

Plowing

Average fuel per acre, kerosene ...	2.51	gal.
Average fuel per acre, gasoline ...	.041	gal.
Lubricating oil per acre	.08	gal.
Man hours per acre	.84	

Preparing and Seeding

Average fuel per acre, gasoline ..	.034	gal.
Average fuel per acre, kerosene .	1.01	gal.
Lubricating oil per acre	.02	gal.
Man hours per acre	.32	

HORSE RESULTS

Out of twelve horse outfits originally entered in the Fargo farming demonstration seven withdrew, leaving five outfits competing with each other in the work of plowing, preparing seed bed and seeding ten-acre plots. The feed costs for horses are briefly summarized as follows:

Average lbs. of hay per outfit	[illegible]
Average lbs. oats per outfit	[illegible]
Average man hours per acre, plowing.	2.64
Average man hours per acre, preparing and seeding	1.43

These results are based on written reports of observers who checked the work of each horse and tractor outfit, and were compiled by the supervising observers' committee.

Interesting cost comparisons can be made between horse power and tractor power when the Fargo demonstration figures are reduced to a dollars and cents basis, and applied to an average farm. But it must be remembered that one of the big items to be considered is the cost of maintaining horses goes on throughout the year, whereas tractor costs stop when the tractor stops.

NEW POLICY IN MARKETING FIAT TRACTORS

A. M. Kennedy, Ltd., distributors for Fiat tractors, trucks and automobiles announces a new policy in connection with the marketing of Fiat tractors.

The price which was hitherto quoted at $2,400 has been reduced to $2,000.

In order to assure dealers and farmers of a supply of repair parts an unique method has been adopted. Dealers who purchase three tractors will be supplied with a complete set of parts, the parts to be paid for when sold. A farmer who buys a tractor direct from the distributor will also be supplied with a complete set of parts, the parts to be paid for when used.

This policy has been considered necessary owing to the fact that the tractor is made in Italy and to allay any fear on the part of dealers or farmers regarding supplies of repairs.

The Fiat will be demonstrated at the Toronto Exhibition.

New Seed-beds Will Soon Be In the Making

WITHIN the month, most farmers will have reckoned their annual profit—or loss—and, regardless of the outcome, will be laying the foundation for next year's crop. New seed-beds will be in the making. There are many who will be looking forward, with renewed hope, to days ahead that will yield greater profit—and less of toil and labor. This goal can be reached, in a great number of instances, by the employment of more efficient farm equipment. This is where the responsibility—and *opportunity*—of Case dealers enter.

We like to think of our 8,000 loyal dealers as a great, constructive army of sincere men who are building not only for themselves, but for the good of the farmers they serve, and in the cause of Humanity and Progress as a whole; an army that has confidence in our leadership and the ideals it represents. Aside from the immediate profit that's in it, every sale of a Case Machine to a farmer who has need for it, means a step in advance for that particular farmer; means more economical and efficient production for him with many consequent advantages to himself and his family, and benefits to the ultimate consumer of farm products.

The new seed-beds that will soon be in the making can be prepared to the best advantage, we believe, by plowing the ground with *Case Kerosene Tractors* and *Grand Detour Power Plows* and finishing the seed-bed with *Grand Detour Tandem Disk Harrows.* These are products that are built as well as it is possible to make such equipment today. The satisfaction derived from the sale of these machines and implements is only exceeded by the satisfaction they give to the purchasers.

Let us co-operate with the farmer in the interests of better and more profitable crops for next year. At the same time, let us help him save the present crop by the use of *Case Steel-built, Galvanized Threshers, Case Silo Fillers* and *Case Baling Presses.* We will co-operate with you.

J. I. CASE THRESHING MACHINE COMPANY

Dept. H 215 RACINE, WISCONSIN

Factory Branches

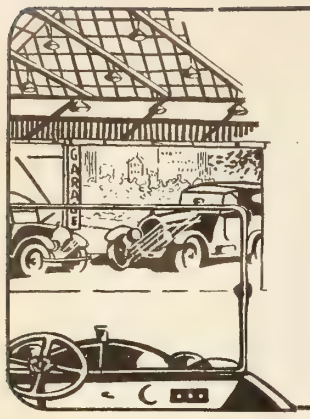
Alta., Calgary—Edmonton
Sask., Regina—Saskatoon
Man., Winnipeg—Brandon
Ont. Toronto

CASE

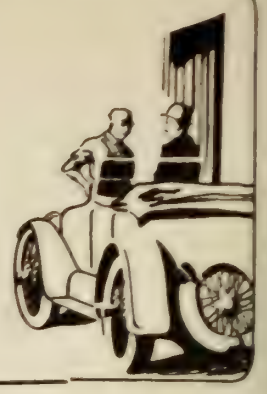
TRADE MARKS REG. U.S. PAT. OFF. AND IN FOREIGN COUNTRIES

POWER FARMING MACHINERY

NOTE: We want the public to know that our plows and harrows are NOT the Case plows and harrows made by the J. I. Case Plow Works Co.



SHOP NOTES FOR THE GARAGE MAN



SECTIONAL REPAIRS ON FABRIC TIRES

BY the application of a built-up sectional reliner, punctures and small holes through the tires and small fabric breaks can be repaired. The size and number of plies in this reliner depends upon the size of the tire and upon the condition of the plies.

Four types of sections are used in the repair of large breaks in fabric tires. They are: quarter section, half section, full section, and inside section.

The inside of the tire should be buffed thoroughly before the repair is torn down. After the carcass plies are stepped out the tire will be too flimsy to allow it to be buffed properly.

The length of the section is determined by the following general rules, which apply to all types of sections:

1. All plies are stepped down one inch in the direction around the tire.

2. Two plies are removed in the case of 3, 3½, and 4 inch tires; and three plies in 4½ and 5 inch tires, unless the size of the injury warrants a stronger repair. This is, to a large extent, a matter of judgment.

3. A margin of 1½ inches is left between the last ply removed and the extreme point of injury.

4. The tread is ordinarily laid back 1½ inches further than the first ply removed.

Quarter Section

A quarter section is used in the case of a tire being rim cut or with a broken bead, 3, 3½, and 4 inch regular clincher

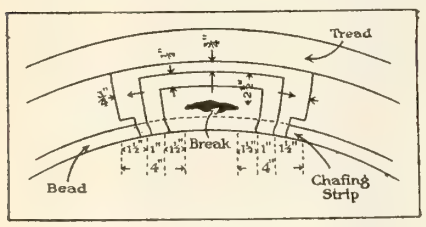


Diagram of Quarter Section

casings. The length of the section is determined by the rules given above. It is necessary to remove only two plies of old fabric.

In the case of a quarter section, the side wall is removed 4 inches from the extreme points of injury. The ends are skived. The chafing strip is removed ¾ inch inside the point at which the side wall was removed. Remove the top ply, cutting 2½ inches outside of the extreme points of the injury and ¾ inch below the tread line. Take this ply out to the toe of the bead. Remove the second ply, stepping down 1 inch on the ends, and ½ inch on the tread side. It is also removed to the toe of the bead. Skive the edges of the injury, removing all loose fabric. After the repair is ready to buff, the ends of the injury should not touch, and should taper to a feather edge. Buff thoroughly all the exposed outside surface 1 inch farther than the largest ply stepped out, and from the toe of the bead to the centre of the tread. It is now ready to cement.

Clean with cloth moistened with solvent. Apply three coats of vulcanizing cement as per the following direction for the application of cement. These directions are general and are to be followed in the cementing of all types of repairs:

1. Apply the first coat thin and rub in well. This corresponds to the filler coat in painting.

2. Apply the second coat heavier than the first and smoothly. This is a cover coat.

3. Apply the third and last coat thinner than the second and heavier than the first, and rub in well. This is a finish coat.

4. Allow the first coat to dry from 30 to 60 minutes, the second 30 to 60 minutes, and the last until the cement becomes tacky, which occurs in 3 to 5 hours, depending upon the humidity. Cement is not dry until all of the solvent has been evaporated. It is important that cement should not be allowed to dry too long: otherwise, an air- cured film will form which may weaken the union.

Building Up the Quarter Section

Dust and dirt should be removed with a cloth moistened in solvent. All edges of the old fabric should be covered with strips of cushion gum ¼ inch wide. Fill the hole through the tire with cushion gum. Apply the first ply of rebuilding fabric, frictioned on two sides, skim-coated on one side, with the skim coated side down, lapping ⅛ inch over the old fabric and extending to the toe of the bead. Apply the second ply, lapping ¾ inch over the old fabric. This ply is made long enough to extend over the bead, and to extend up the inside of tire to a point half way between the centre of the tread and the tread line.

Where the new fabric passes over the bead, it should be trimmed down to make a butt joint with the old fabric. Replace chafing strip with light fabric, lapping it ¼ inch at the ends.

This chafing strip will extend over the bead, and 1 inch inside of the tire. Replace the side wall with bead gum. Before the last ply is stitched down on the inside, a small patch of rebuilding fabric, 1 inch larger all around than the injury, is placed over it. Cover all edges of the new fabric with strips of cushion gum.

Dust the inside of the casing and the outside of the casing lightly with soapstone. Repair is now ready to be cured.

Half Section

A half section is built into the tire when the injury is between the bead and the centre of the tread. The length of the section is determined by general rules. It is necessary to remove only two plies of old fabric. When the injury is large enough to warrant the removal of more than two plies, the full section must be built into the tire.

Lift the tread and breaker from one end, allowing the tread to hinge at the other. Remove the side wall 4 inches from the extreme points of injury. Skive the edges. The chafing strip is removed ¾ inch inside the point at which the side wall was removed. Measure back 1½ inches from the ends of the section and step out the top ply. The top ply is stepped out 1 inch from the tread line on the side opposite the break to the toe of the bead on the same side as the break. The second ply is taken out 1 inch narrower all around than the first. The ends of the tread at the point where it is cut across the tire should be skived on an angle of 45 degrees. If there is a hole through the tread, all loose gum is trimmed out. The exposed surface on the inside of the tire is buffed. The inside of the tire is buffed from toe to toe of the beads and 1 inch longer on either end than the largest ply taken off. This should be done before the tire is torn down. Follow the instructions already given for cementing.

Building Up Half Section

When the cement is dry, clean with a cloth moistened with solvent and cover the outside of the entire exposed surface with cushion gum 1/64 inch gauge. This gauge can be obtained by

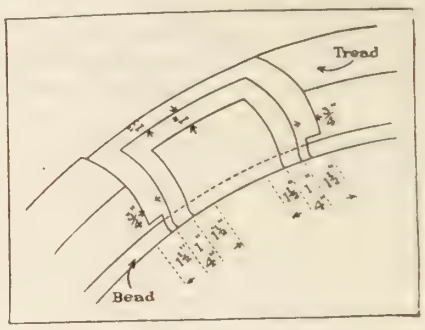


Diagram of Half Section

cutting the 1/32 gauge stock one-half the size of the surface to be covered and stretching 100 per cent., the cushion gum extending to within 1½ inches of the heel of the bead. The hole through the tire is filled with cushion gum. The first ply is replaced, lapping the edges of the second ply removed ⅛ inch. The second ply is replaced, lapping the edges of the first ply removed ¾ inch. This ply is cut long enough to cover the inside of the tire from bead to bead. At the point where the fabric goes over the bead, it is skived so as to make a butt joint with the old fabric. After this ply is replaced, cover the entire surface of the tread with cushion gum, 1/32 inch gauge. The chafing strip is replaced, lapping the old chafing strip ¼ inch at the end. Replace the side wall with tread gum.

The tread is then laid down, stitching carefully between the buttons. The "V" shaped hole where the tread was cut is filled with tread stock higher than the original tread, the new gum is then cut out to match the pattern of the tread. Any holes in the tread are repaired in the same manner. A small patch of rebuilding fabric, 1 inch larger all around than the injury is placed over it. The last ply from the outside is carried over the bead and around the inside of the tire to within 1 inch of the bead on the side opposite the injury.

The chafing strip is carried 1 inch inside the tire. Cover all raw edges of the fabric with cushion gum. Dust the inside and outside of the tire with soapstone. The tire is now ready to be cured.

Full Section

A full section is used in the case of a large blow-out or where the blow-out is in a position that it cannot be repaired with a quarter or half section.

Two plies are removed from the 3, 3½, and 4 inch tires, and three from the 4½ and 5 inch tires. This is a general rule that must be varied if the injury is exceptionally large, and the fabric around the hole must be removed on account of separation. The length of the section is determined by the general rule.

The inside of the tire should be buffed 2 inches longer than the longest ply removed. The tread is laid back the length of the section the same as in the case of a half section. The side wall is removed from both sides of the tire, and both chafing strips are removed. The first ply is stepped out from toe of bead to toe of bead, and 1½ inches inside the point at which the tread was laid back. The other plies are stepped out 1 inch shorter on either end than the preceding. All loose fabric and all loose gum is trimmed from the injury. Buff thoroughly all the exposed outside surface of the carcass and underside of tread and cement according to general instructions.

Building Up The Full Section

When the cement is dry, remove any dust with a cloth moistened with solvent. Cover the exposed surface of the tire with cushion gum 1/64 inch gauge, to within 1½ inches of the bead. Replace the old plies with new rebuilding fabric, skim coated side down, lapping ⅛ inch. This applies to the under plies. If the ply taken out is trimmed to the toe of the bead, the ply replaced should be trimmed at the toe also: that is, the new ply should be trimmed at the same

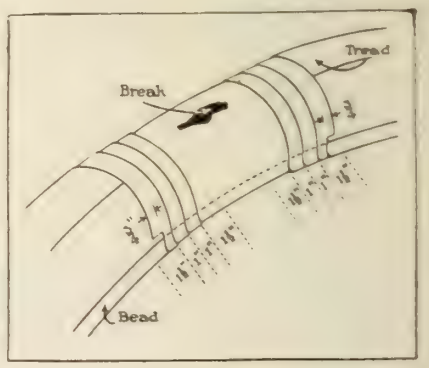


Diagram of Full Section

point as that at which the old ply was trimmed. The top ply is cut long enough to cover the outside and the inside of the carcass and to lap itself ¾ inch. The side walls and chafing strips are replaced and the tread is laid back in the same manner as in the half section. The last ply is then stitched over the bead. On the one side it is carried 1½ inches up the inside of the tire, and the other end of the ply carried around the inside of the tire to meet it with a lap of ¾ inch. At the point where the fabric goes over the bead, it is skived so as to make a butt joint with the old fabric. A piece of new fabric is cut large

WILKIE

Piston Rings

The Scientifically-made one piece Piston Ring

Wilkie

Made in Canada by Skilled workmen

Standard with the Packard Montreal Motor Co.

From now on "Wilkie" scientifically-made Piston Rings are the standard replacement at the Packard Montreal Motor Co. This is an additional tribute to the outstanding quality of "Wilkie" Rings.

Were this but a solitary instance of "Wilkie" standardization it would still mean much, for the distributors of this famous car have high, well-founded ideals that a piston ring must live up to. But it is not. Daily we are hearing of more and more cases where "Wilkie" Piston Rings are being used exclusively.

And this is not unusual when you consider the inherent capabilities of the "Wilkie" Ring. It is tight-fitting and trouble-preventing. It has no defects—no hidden flaws. It is the best insurance against dirty spark plugs, carbon accumulation, loss of power and all the other symbols of inferior piston rings.

If you are not using "Wilkie" Piston Rings order a supply from your jobber to-day. Remember, "Wilkie" Rings are the scientific answer to every piston ring trouble. Stocked in regular and over sizes.

Visit the "Wilkie" Piston Ring exhibit at booth No. 30., Auto Accessory Building, Canadian National Exhibition.

Made in Canada by

Windsor Machine & Tool Works

312-318 Pitt Street West, WINDSOR, ONT.

BOY AND SLATE
Puts Dealers in Spotlight

It gets the eyes of motorists. And it gets them every day.

People have been known to actually drive around the block just to see what painted epigram was on the slate "that day."

This is the kind of a sign for you.

Get This Lively Business-Builder

This sturdy boy and slate is 6 feet high. It is painted in natural colors. It is supplied to En-ar-co Dealers, along with a series of epigrams, that permits a change every other day. Motorists like it—because it is an interesting sign to watch. Therefore, the En-ar-co Boy and Slate sign is now established as the brightest and best business builder for Dealers in Gasoline and Oil.

Actual Size 6ft. x 5ft.

Write us for particulars. Send to our branch nearest you today. Address Dept. M.T.I.8 Do this now, before you have had a chance to put it off.

CANADIAN OIL COMPANIES Limited

Branches:
Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary.

A Top for Every Car

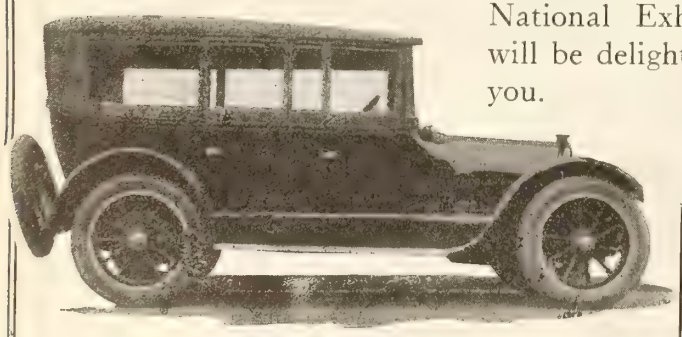
THIS IS WHAT WE CLAIM TO DO.
THIS IS WHAT WE DO DO.

We will put a top on any car, large or small.

We will guarantee our work with satisfaction either in new or repair work.

Link up with us and add to your own service.

Call and see us when you come to the Canadian National Exhibition we will be delighted to meet you.



Remember our Slogan

" Everything above the Chassis "

Only one man in a locality can make use of our service—it's exclusive. Write today for information regarding our profitable proposition.

AUTO TOP and EQUIPMENT CO., Limited
270 Dundas St. W. TORONTO

enough to run from toe to toe of the beads and extend 1 inch farther on either end than the ply brought around the outside. This is stitched down inside the tire over the ply which was brought around from the outside. All raw edges of new fabric are covered with strips of cushion gum. Dust the inside and outside of the tire lightly with soapstone, and cure.

Inside Section

Inside sections are made to repair fabric breaks on the inside and almost through the tire, when the injury is small and it is deemed inexpedient to lift the tread. It is used to make repairs below the tread lines. It replaces the full section for small repairs. Half, or less than half, of the plies are taken out in four or five ply tires. When two plies are removed, the first ply taken out is taken out 2½ inches from the extreme points of injury. When three plies are removed, the first ply is taken out 3½ inches from the extreme points. The largest ply is taken out to the toe of the bead and each ply is stepped out 1 inch narrower than the first ply. This is buffed and cemented in the regular way.

The first ply is replaced, lapping ⅛ inch all round. No skim coat of cushion gum is necessary. All raw edges of fabric should be covered with a narrow strip of cushion gum. The skim coated side of the rebuilding fabric is placed down. All underplies are lapped ⅛ inch. The last ply replaced is ¾ inch, and carried to within ½ inch of the toe of the bead. One or two over-all plies are placed over the repair running from toe to toe, and extending 1 inch over the last ply replaced in the toe. Dust the repair with soapstone and cure.

(We are indebted for the bulk of this material to the Goodyear Tire and Rubber Co.).

NASH CARS REDUCED

THE NASH Motors Co. announces a reduction in the prices of Nash passenger cars, both six and four-cylinder models, ranging from $230 to $500. These prices are as follows: Nash Six—5 passenger touring car, $2,395; 7 passenger touring car, $2,595; 7 passenger sedan, $4,095; 4 passenger coupe, $3,695; 2 passenger roadster, $2,370; 4 passenger sport model, $2,595. Nash Four—5 passenger touring car, $1,995; 2 passenger roadster, $1,975; 3 passenger coupe, $2,795; 4 passenger sedan, $3,075. In a statement given out by C. W. Nash, president of the Nash Motors Company, and considered one of the leading authorities on efficient and economical manufacturing, he reported that these reductions represent lowered production costs in the big Nash plants at Kenosha and Milwaukee. They are handed on to the public because it has always been the policy of the Nash Motors Company to give buyers the benefit of savings accomplished through operating economy. "We have always believed," said Mr. Nash, "that no man or institution which did not always deal fairly and squarely with the public could long survive.

A NEW ANTI-GLARE LAMP FROM ENGLAND

FROM England comes the news that Alfred E. Terry has invented an apparatus which abolishes the usual diffused glare from motor car lamps, and enables drivers in opposite direction to see whether the road is clear. It consists of a grid composed of thin aluminum plates crossing at right angles and forming a network of square tunnels about 3-8 inch wide, and two inches long. These are held in a frame which fits on to the lamp. The result is that the beam is concentrated about 4 feet or 5 feet in front of the lamp, whence it widens out to give sufficient light laterally, while at the same time an increased range directly ahead of some 20 yards compared with bare lamps is obtained. A demonstration shows that glare is largely avoided.

AUTOMOBILE SHIPMENTS IN JULY SHOW INCREASE

New York, July 14.—According to statistics compiled by the Automobile Chamber of Commerce, from companies producing about 75 per cent of the country's output, shipments during the month of June were, approximately, 8 per cent. in excess of those of the previous month and 60 per cent. in excess of those of June last year. Furthermore, it is reported that a canvass of local automobile companies reveals the fact that sales for the month of July to date are running ahead of those of last month for the first time on record. July sales are always below those of June according to motor car dealers. Officials of the Chandler Motor Company say the sales for that company for June were the largest of any month since last October.

ITALY WITHDRAWS RESTRICTIONS AGAINST IMPORTATION OF CANADIAN CARS

THE ITALIAN Government, it is announced by the Department of Trade and Commerce, has withdrawn restrictions against the importation of Canadian motor cars into that country. Trade Commissioner W. McL. Clark writes from Milan that following a representation made, Canada has been placed on the same footing as Great Britain.

RUGGLES APPOINT WESTERN SALES MANAGER

A NEW appointment of considerable interest to the automotive world, is that of C. W. McElroy, late of the Republic Motor Truck Company, of Alma.

C. W. McELROY.

Michigan, to the post of western sales manager for the Ruggles Motor Truck Company, Limited, of London, Ont., with headquarters at Winnipeg and Vancouver, and in complete charge of sales in the territory between those two points.

"Mac", as he is familiarly known to his associates, has had a very extensive experience in the distribution of motor trucks during the past five years throughout the north western states for the Republic Company, and has a thorough knowledge of motor truck transprtation units, both as to construction and service.

TRACTOR USED AT GOLDFIELDS

THE Canadian Associated Goldfields are using a tractor to haul supplies over the 18-mile road from Dane to Larder Lake, in the Nipissing district, which is giving exceedingly good satisfaction. It is said the cost of transportation has been reduced to approximately 50 cents per hundred pounds. This compares with $3 per hundred pounds last spring when the road was in poor condition and when teams were being employed to haul the material.

NEWS — OF THE TRADE FOR THE TRADE

ALBERTA

GRANDE PRAIRIE:—Crummy Bros. are conducting a full line implement business here. They are handling the I.H.C. line.

WATERHOLE:—Fifty miles from the nearest railroad a dealer named Smith is carrying on successfully an up-to-date implement business, featuring the International line.

HANNA:—Mockett and Campbell, Ford dealers here, enjoyed 100 per cent. increase in sales this spring over the corresponding period of last year.

BRITISH COLUMBIA

SUMMERLAND:—C. V. Nesbitt and G. M. Forster, automobile mechanics, of Vancouver, have rented a building and are remodelling it into a modern garage.

VANCOUVER:—The Vancouver Automobile Dealers' Association held its first annual picnic to Bowen Island, July 14, when nearly 1,000 dealers and friends attended.

VANCOUVER:—The Pender Garage is a new business organized here by four returned men. A day and night service is provided.

MANITOBA

PORTAGE LA PRAIRIE:—R. Seneca has purchased the implement business formerly conducted by Finch Bros.

CYPRESS RIVER:—An automobile and tractor repair business has been opened by A. Johnson.

MINIOTA:—Dorward Bros., automobile dealers, have added implements to their business.

WINNIPEG:—The Cadillac Motor Sales has been appointed distributors in Manitoba and Saskatchewan for Nash motor cars.

WINNIPEG:—The Service Motors Co., propose to erect on Osborne Street at a cost of $400,000 a service station, which, it is said, will be one of the largest in Canada.

ONTARIO

CHATHAM:—The Car Owners' Garage Co. of London, Ont., will establish one of their chain of standardized garages here. They have purchased the vulcanizing business formery conducted by A. B. Yeo and P. B. Whiteley.

THOROLD:—The Gove Motor Car Company of Detroit have completed arrangements to establish a factory here for the manufacture of automobiles, trucks and tractors.

CHATHAM:—Lorne Tractors, Ltd., is a new industry to locate here. A site for a factory has been secured in the west end of Chathom and the company proposes to begin building operations almost immediately.

TILLSONBURG:—A new garage has been opened by H. E. Cowley. All kinds of repairs on all makes of cars will be handled.

DUNNVILLE:—W. Marshall and M. E. Shaver have taken over the Central Garage formerly conducted by M. G. Lymburner. Rpeairs, gasoline, oils, etc., will be handled.

BRIGHTON:—Goodrich and Simpson are the proprietors of a new garage recently opened here. Thy will handle all kinds of repairs including battery charging and vulcanizing.

BLOOMFIELD:—Ernest Marrie, formerly connected with the Bloomfield Garage, has opened a new garage on Main Street. Repairs, accessories, greases, oils, gasoline, etc., are handled.

SMITHVILLE:—Smithville Metal Industries, Ltd., is a new concern about to erect a factory for the purpose of manufacturing automobile accessories and carrying n a general nickel and brass plating and machine foundry business.

OTTAWA:—In connection with the Central Canada Exhibition from Sept. 9 to 17, a large motor show will be held which will be the most ambitious yet ventured by Ottawa motor distributors.

OTTAWA:—Ross O'Hara and Co., proprietors of the Stewarton Garage have moved to larger quarters at Guigues Avenue, corner of King Edward. Increasing business has necessitated the change. The new garage is thoroughly modern and equipped to give every kind of automobile service

WINDSOR.—Frank M. Foster, Ltd., moved to new quarters on August 14 A spirited Used Car sale was conducted previous to going into the new garage.

HAMILTON:—F. J. Gernandt of the International Harvester Co., has been appointed chairman of the Hamilton branch of the Canadian Manufacturers' Association.

PALMERSTON:—W. H. Morgan has opened a new implement business here, handling the John Deere line.

PAISLEY:—R. J. Porter has opened a garage here and will conduct a general repair business.

TORONTO:—City Battery Shop, Ltd., is a recent incorporation capitalized at $50,000, to manufacture and deal in storage batteries and electrical apparatus.

TORONTO:—A new Hassler service station has been opened at 79 St. Nicholas St., equipped to render a complete Hassler Shock Absorber service.

QUEBEC

HUNTINGDON:—B. W. Allen, automobile dealer, has made some additions to his premises and installed special equipment to provide a first class Ford repair service.

MONTREAL:—Savard Motor Sales, 124 Laurier Ave., are contemplating the erection of a new garage.

MONTREAL:—Rolls-Royce has announced that the Ginsberg Motor Company, Montreal, has been appointed their sales representative for all of Eastern Canada, and by the end of July would have the latest English model on exhibition.

BOUCHERVILLE:—Set up on blocks to keep it in position, a Studebaker car was found at Boucherville, hard at work sawing wood by means of a belt passed around its fly wheel and connected to a circular saw. A farmer had taken charge of the car which he saw lying abandoned on the road, and put it to work. The car, it turned out, had been stolen and abandoned.

SASKATCHEWAN

SASKATOON:—The J. H. Early Motor Company, Ltd., will erect a modern garage on the site of the old Methodist church, Third Avenue. It will be of one storey, constructed of brick and will cost in the neighborhood of $30,000. The building space of 100 feet will be divided in two, lengthwise, 45 feet in one position and 55 feet in the other. The 45 foot portion will be occupied by a show room, storeroom and repair shop. The 55 foot portion will be devoted to storage.

DYSART:—A new vulcanizing business has been opened here by J. C. Miller.

CUPAR:—Brown and Ursel have succeeded Brown & Co., in the garage business here.

LEMBERG:—H. Roberts is now carrying on the implement business formerly conducted by E. P. Aldons.

NOVA SCOTIA

DIGBY:—The Universal Garage was destroyed recently by fire. Sixteen cars and two tractors were lost. The damage is estimated at $40,000.

BURD
High Compression
PISTON RINGS

The World's Standard of Efficiency

permanent efficiency, therefore give beter service efficiency—maximum power at the lowest expense for gasoline and oil—and prolong the life of the motor by keeping it clean and free from carbon. They are unequalled for lasting resiliency and permanent efficiency, therefore give better service at the end of six months than when first installed.

Backed By This Guarantee

Every Burd High Compression Piston Ring is Guaranteed to be free from defects in material and workmanship—and warranted to give more power, with less fuel consumption, than any other piston ring—when installed in cylinders that have not been warped or scored—or your money will be refunded after thirty days' use.

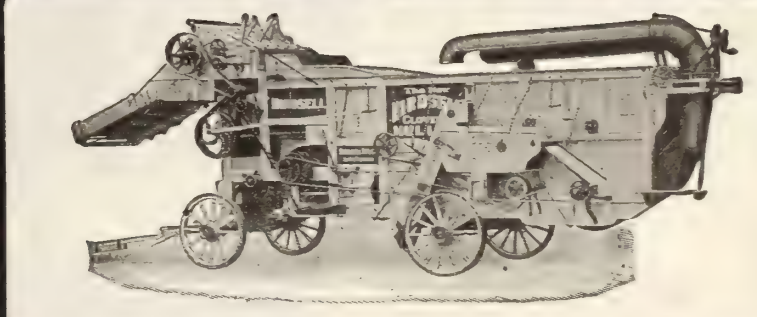
For sale by jobbers everywhere.

BURD RING SALES COMPANY of CANADA
322 McIntyre Block, Winnipeg, Man.

Burd High Compression Ring Co.,
Rockford, Ill., U. S. A.

BIRDSELL CLOVER HULLERS

Best for Threshing, Hulling and Cleaning { Little Red or Common Clover Seed; Big English or Mammoth Clover Seed; Alsike Clover Seed; Sweet Clover Seed }



THREE SIZES FOR CANADA

			Power Required
No. 2	Cylinders 27" x 32",	Capacity 3 to 5 bushels per hour,	6 to 8 H. P.
No. 1	Cylinders 30" x 36",	Capacity 5 to 7 bushels per hour,	8 to 10 H. P.
No. 8	Cylinders 40" x 52",	Capacity 7 to 10 bushels per hour,	10 to 12 H. P

WE HAVE A SIZE TO SUIT EVERY NEED

ANN ARBOR HAY PRESSES

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Birdsell Manufacturing Co.
Foot of George Street
Toronto, Canada

Automotive Accessories *and* Implement Equipment

THE KNOK TECTOR

OF VERY recent invention is the Knok Tector, an instrument devised principally for use in locating trouble in automobile motors or bearings, or gears or anywhere in the car and also adapted to many other uses.

The idea in using a Knok Tector is to ascertain accurately and with certainty the origin of sounds which are made by some moving defective part of mechanism or it may be an improperly adjusted or wornout part.

This device looks very much like a doctor's stethoscope and is used in very much the same way. The binaural is placed to the head so as to permit the ear tips to enter the ears. When properly placed the operator will be able to hear only the sounds transmitted directly through the tubes from the Tector. The device is fashioned so that the knock or grind of the trouble giving part is heard distinctly and the vibrations and resonance from surrounding parts do not interfere.

To determine where the defect is the Tector is pressed against the object to be tested, moving it until the spot is found where the objectionable noise is most intense, this will be found to be the centre of the trouble.

With a Knok Tector, the makers say, such trouble as piston slaps or knocks, loose wrist pins, loose bearings, noisy gears, noisy tappets, rattles, etc., may be located without going through the long process of tearing down and guessing. It is made by the E. R. Benson Mfg. Co.

Knok Tector

Black and Decker Portable Grinder

MOTO-METER LIGHT AND PARKING LAMP

THE Motor-Meter Company, Inc., announce that they are about to put on the market the BOYCE MOTO-METER LIGHT and PARKING LAMP, which has been specially designed to meet the demand for a practical means of illuminatng the BOYCE MOTO-METER for night driving.

The new light and parking lamp is so constructed that a strong beam of light is directed on the face of the MOTO-METER, which clearly illuminates the instrument while it is said no reflections are possible that would tend to confuse the driver.

It may also be converted into a parking lamp. By turning the rear disc about one half an inch you open up six rear red windows which give a red danger signal that can be seen a great distance. An ingenious shutter at the rear renders the red parking lamp invisible while driving.

The light and parking lamp is adjustable to any car and only a two-CP tail light bulb is required.

The device is unique yet simple in construction. A mirror may be supplied at small extra cost. The entire device is made of brass, nickel plated throughout. Two special brackets enable it to be readily attached to the windshield of either open or closed cars.

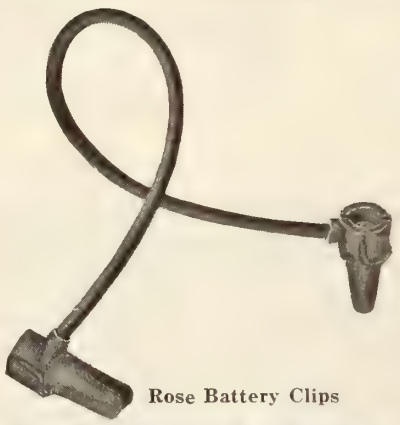
BLACK & DECKER PORTABLE ELETRIC GRINDER

THE Black & Decker Mfg. Co. announce that they have perfected and now offer to the trade a portable electric grinder embodying all the features of the Black & Decker drill. The new grinder, as the accompanying photo shows, has the well known pistol grip and trigger of switch control which gives the operator entire control over the tool at all times making it unnecessary to shift either hand to start or stop it.

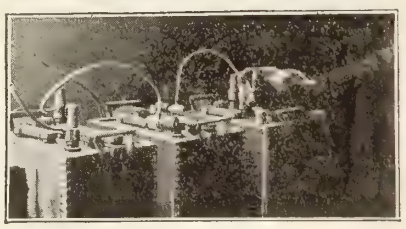
While this product is essentially a portable electric grinder it is supplied with quick detachable base and adjustable stool rest so it can be used with equal facility as a bench grinder. Besides the base the equipment also includes two 5" x 1" grinding wheels, one fine and one course, a wire brush wheel and a rag buffing wheel. With this complete outfit it is claimed it is not necessary to buy any extras to take care of any grinding, cleaning, buffing or polishing jobs around garage, service station, vulcanizing shop or machine shop.

There are scores of jobs that can be done with this grinding machine and it can be used as a power unit for testing generators, magnetos, distributors, etc., by mounting pulley on grinding shaft. It has grease lubrication throughout, forced air cooling, chrome nickel steel gears and shafts and aluminum alloy housing. The entire mechanism is protected from dust and other foreign matter.

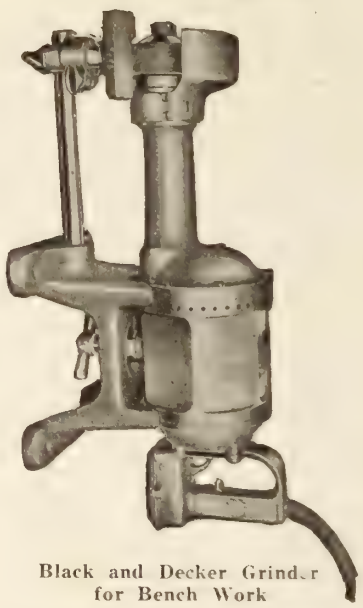
This grinder is exceptionally light and can be operated on either direct or alternating current at will.



Rose Battery Clips



Rose Battery Clips Installed



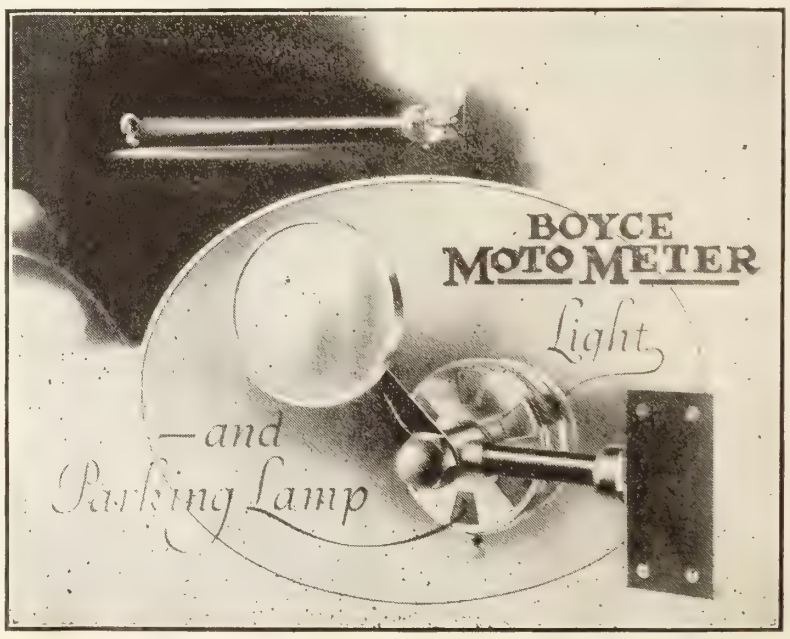
Black and Decker Grinder for Bench Work

ROSE EVERLASTING BATTERY CLIPS

THIS battery clip is made of a non-corrosive metal. The makers say it reduces charging costs as there is no loss of current in transmission as in the case where exposed conductors are employed. They will fit all sizes and types of battery posts now in use.

The conductor is heavily insulated and both ends are cast in, making it impossible for the acid to come in contact with the copper cable carrying the current.

The Rose battery clips are easily and quickly attached and either end may be employed in completing the connection. Compressed, clothes pin fashion, the open end will slip over the straight post, and when the pressure is released will grip the post firmly. Compressing the taper end of the clips they may be slipped into the taper opening of the female type of post, giving a firm contact the entire width of the post. It is claimed they will also grip various sizes of wires, cables, flat bars, etc. Made by the Frank Rose Mfg. Co.



Moto-Meter Light and Parking Lamp

ONE-MINUTE VALVE GRINDER

THIS valve grinder is based on a new principle, combining intermittent rotating and hammering actions. The makers say it will grind a valve of ordinary size in from 20 to 40 seconds. It is easily operated and adjusted and works by turning a crank.

All parts subject to wear are hardened. With each revolution of the spindle the valve is raised from its seat and returned with a hammering blow, succeeded by a partial revolution of forced grinding action. The positive hammering, it is said, firmly imbeds the abrasive between the seats and each raise of the valve provides to replace the abrasive into a new position, thereby increasing the efficiency of the abrasive. Made by the One Minute Valve Grinder Co.

"Hood Tires"

"Are better than Good Tires"

Write us for our booklet showing why Hood Tires should prove more satisfactory and easier selling than all other makes.

We can offer you a splendid dealer proposition.

Protect-O-Cap

The trim outline and graceful curves of the PROTECT-O-CAP, coupled with the protection it affords, make it one of the easiest selling propositions anyone could wish to handle.

Write our accessory department for anything you may desire in auto accessories. If we cannot supply you we will put you in touch with the correct parties.

Some of Our Lines Are:

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-KLAXON-

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WHOLESALE AUTOMOTIVE EQUIPMENT

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KATY KOTTER PULLER

THIS device is designed to facilitate removal of cotter pins and works on the principle of a pair of pliers. It is made from drop forged steel, tempered and polished and with reasonable care the makers claim it will last indefinitely.

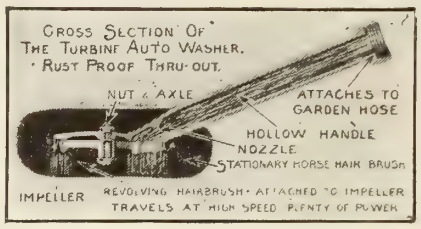
The makers say that the average time required to remove cotter pins on the ordinary connecting rod job with the Katy puller is about one minute as against from five to twenty minutes the old way. It is made by the Katy Tool Mfg. Co.

Katy Kotter Puller

TURBINE WASHER

THIS is a miniature turbo-brush contrivance which, driven at a high rate of speed by the stream from a hose, reaches into every crevice of the wheels, springs, etc., of an automobile or truck, and digs dirt and grease loose. device is said to give excellent service, as the soft, rapidly moving bristles require the minimum of pressure, do not pick up gritty particles and thus prevent scratching. After driving the turbine the clean water is thrown out through the brush bristles by centrifugal force.

It is manufactured by the Turbine Auto Washer Co.



Cross Section of Turbine Auto Washer.

Turbine Washer

BRACE RITE TRUSS ROD

BRACE-RITE truss rods are designed to increase the rigidity of the Ford rear axle. The braces are made in both the single and double truss pattern, the former being applied beneath the axle while the latter braces it across both the bottom and the back. The collars or brackets of the double truss rod are of the two piece type, having three points of tightening. The rods are secured to the differential housing by means of specially designed clamps and boots. The makers say the truss rods will not interfere with the application of any shock absorber or the action of the spring. Manufactured by the Master Products Co.

WHITE MOTOR CONTROL

THE White Motor Control places in centre of the steering wheel directly under the driver's eye, all the instruments heretofore arranged on the dash. The makers claim that operation of the car becomes more restful since less concentration is necessary.

The control is mounted in the steering wheel flush wth the rim of the wheel.. It is a compact unit containing the speedometer, oil gauge, ammeter, electric control switches, horn button, or any other indicating mechanism that is standard equipment on a car. On the Motor Control, the makers claim, body wiring has been eliminated, instrument mounting has been dispensed with and the connection of chassis to body wiring has been reduced to a single operation.

By removing the top cover of the control it is possible to reach all the instruments, and all the wiring back of the switches is exposed in a position where there is plenty of room, and where a repairman can work unhampered.

A specially designed steering column is provided through which the wires are placed. Manufactured by the Whyte Duffield Manufacturing Company.

TRANS-LEVER SPRING

THE Trans-Lever spring is composed of two springs, which take the place of the Ford rear spring. Each spring measures forty-five inches, and as the ninety inches of spring is free, the vibrations are spread over the entire length, thus, the makers claim, avoiding crystallization and making the spring practically unbreakable.

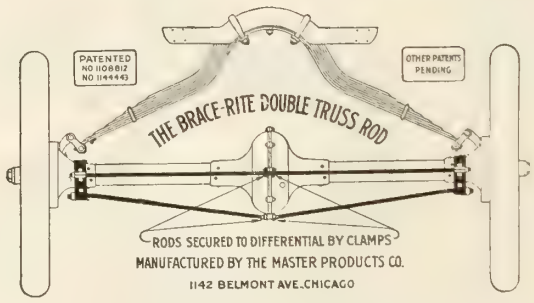
The static stress of the steel in the Trans-Lever construction under the full Ford load, it is said is 62,000 pounds per square inch as compared with 140,000 pounds per square inch static strength of the steel itself.

It is the fundamental principle of spring action that the energy which is stored up in a spring by bending must be released. When this release takes place suddenly, it acts like a bow and arrow, and snaps the body up with a quick jerk. If this energy can be released slowly, there is no snap to the body. The Trans-Lever spring, the makers claim, releases the pent-up energy so slowly that it is scarcely perceptible to the occupants of the car. It reduces the body throw without the use of any auxiliary attachment.

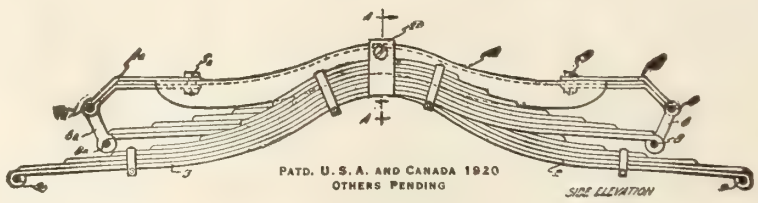
This spring, the makers state, transforms the frame of the car into what is known as a "three-point suspension." This "three-point suspension" prevents any possible twisting of the frame of the Ford. Made by The Canada Automotive Products Co.

Lox-On
Dust Cap

White Motor Control



Brace-Rite Truss Rods



Trans-Lever Spring

VACUUM OIL AND GAS SAVER

THIS device is designed to improve lubrication of gas engines. It operates by sucking the moist warm air and gas fumes from the oil chamber, thereby it is claimed preventing the oil from thinning out and over-heating, resulting in perfect lubrication. They claim the following advantages:

The Vacuum prevents oil from leaking out of joints when engine is running.

Keeps the lubricating oil in the crank case at a standard; and takes the oily vapour in mixture, which gives the cylinders proper lubrication with cool oil.

Prevents motor pumping oil which carbonizes in the cylinder heads caus ing dirty spark plugs.

In the event of oil gauges being left open or broken, the vacuum created by this device maintains oil in the base when running, preventing the burning of bearings, & loss of oil.

It saves gasoline, it is claimed, by drawing warm moist air and gases, which leak past the pistons into the base.

Instructions for installation are given as follows: Remove hot air pipe and breather cap. Press large end of valve case in opening at back of carburetor, afterwards pressing up on the other end of the tube in breather opening. If this cup does not enter readily, slide it to th proper position on tube, using a to and fro twisting motion, at the same time holding the valve case to prevent it becoming detached from carburetor. After cup enters, open trap door, lay small block of wood across and tap it gently with a hammer. Use caution not to pull or pry on tube after valve case is in place—you may distort tube clamp and cause air leaks. Turn needle valve down (right hand) to where the motor runs at its best. If hot air pipe is desired, saw ¾ inch off small end, which will fit over back of valve case. When installing on self starting cars bend priming rod lever out slightly by inserting screw driver between lever and carburetor.

Manufactured and distributed in Canada by the Alberta Motor Specialty Co., Ltd., Toronto.

LOX-ON DUST CAP

THIS dust cap, it is said, prevents the air from a leaking valve leaving the tube. It is quick-acting and air-tight.

To apply the dust cap it is slipped down over the valve stem as far as it will go, then a twist of the cap locks it on, creating, the makers say, an air-tight seal, doing away with the old method of screwing down over the entire length of the tire valve stem.

It is a one piece shell and is strong and non corrosive, and fits any valve stem. A ⅜ inch compressible gripping surface it is claimed guarantees air-tight seal. It is made by the Automatic Safety Tire Valve Corp.

Are you "Selling Service"?

If you aren't, under present conditions, you are doing your business more harm than good by keeping your doors open.

Customers are comparatively easy to get the first time, it is keeping them that proves the calibre of the dealer. Service and serviceable articles constitute the logical method of holding their trade.

EXCELLENCE piston rings will fit perfectly under any conditions due to the fact that they expand both ways, this causes a perfect seal in the firing chamber and renders the owner more power because every ounce of power is then directed right against the cylinder head.

If you doubt whether your customer will appreciate this class of merchandise just write us and order a few and let them demonstrate that our claims are in no manner exaggerated, it sounds

reasonable doesn't it? Why not try it, we are willing to have you decide whether to renew your order or not after you see the satisfaction they afford your customers.

EXCELLENCE
2-PIECE PISTON RING

LAMONTAGNE LIMITED

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QUEBEC MONTREAL WINNIPEG

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Intelligence

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In search for ideas, new business or new markets we can help you—

When you want to learn the amount of publicity on any subject or other business information we can supply you—

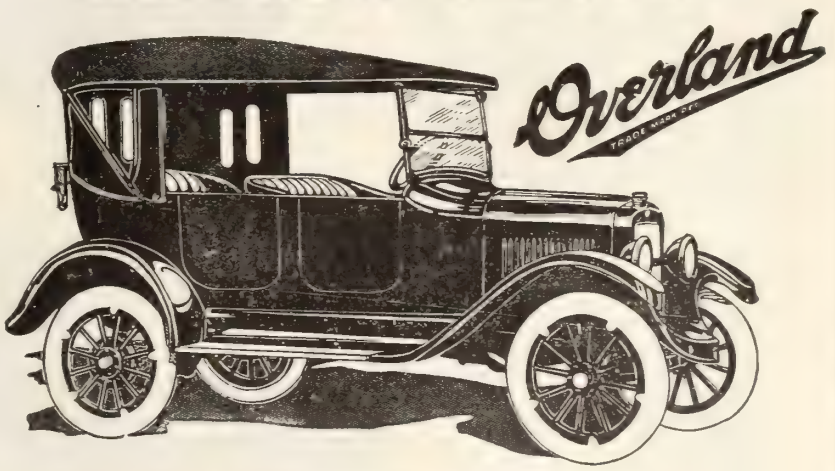
We collect data, advance information, market reports or anything the newspapers of Canada say on any subject—

Give your staff the opportunity to do better work by using a real service. Suggestions and rates gladly given.

CANADIAN PRESS CLIPPING SERVICE

143-153 University Ave., Toronto

An Improved Car —A New Price



Now $985

Aggressive Dealers Wanted

We have some good open territory. When you come to the Exhibition be sure to visit the Overland and Willys-Knight Exhibit. If interested in a dealer contract see Sales Representative at this Exhibit—the new low price makes the Overland a more attractive proposition than ever.

WILLYS - OVERLAND LIMITED

Head Office and Factories: Toronto, Canada

VICTORY AUTO DOOR CATCH

THE Victory auto door catch is so constructed that the latch of the lock slips very easily over the riser, and comes in contact with a trigger. This trigger automatically grips the latch, takes up all the play, and thus absolutely prevents rattling. It not only stops the rattle of the lock and vibration of the door, but, it is said, it also makes the door easy to fasten securely without the usual slamming, and prevents it from flying open unawares. It can be used both as a door and a window catch.

Instruments for attaching to the door are as follows: With a scratch point make a line showing where the present catch is fastened on the car. Remove the old catch, then place the Victory door catch back of the line, a little over 1/16 of an inch, as shown on the drawing, and screw in place.

For attaching to the window raise the glass to closed position. Put Victory catch against the upper edge of centre of the window frame, and press against the glass until tight. Hold in this position and mark screw holes with a pencil. Lower glass and attach, setting latch in toward glass 1/32 of an inch closer than marked holes indicate. Manufactured by the Victory Auto Accessories, Ltd.

AVERY "DUPLEX-AUTOMATIC" STRAW GOVERNOR

AS regular equipment on the Avery "Yellow-Fellow" and "Yellow-Kid" Separators nine new duplex-automatic straw governors which automatically control both the amount of straw fed into cylinder and the amount of straw that is delivered to the carrier by the feeder are now added. This governor is actuated by the volume and condition of the straw.

The feature of the governor is an adjustable throat between the cylinder and the retarding fingers and, acting automatically, prevents the cylinder from slugging or wrapping. It also automatically stops the carrier from throwing straw into the feeder until what is already there is taken care of by the cylinder. The entire working of the governor, the makers say, is automatic without any dependence on the speed of the cylinder—the action is determined only by the amount and condition of the straw.

This feeder is designed to feed in more grain and at the same time, it is claimed, to feed it in better than the old style feeder. It automatically takes care of overloading of the feeder and distributes the grain evenly before it reaches the cylinder. It straightens out and thoroughly splits up all bundles of grain that have been fed in crosswise through careless or bad pitching, and feeds all the bundles into the cylinder from off the top as they should be fed. In this way the separator is fed to full capacity faster and more evenly than it can be done by hand, without slugging the cylinder or allowing the separator to waste the grain which always happens when the cylinder is slugged.

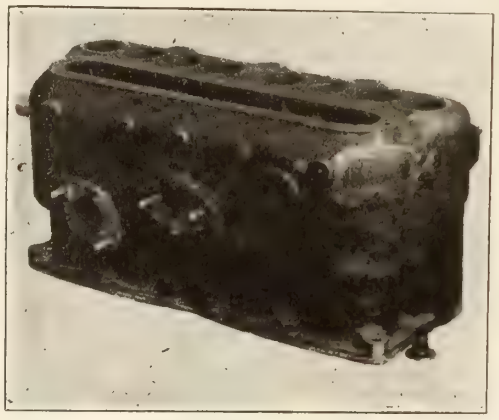
The governor consists of a number of steel fingers placed in an almost vertical position in the bottom of the feeder pan, while the retarding comb is a casting moving forward or back from the cylinder and is operated by the forward and downward pressure of the grain against the straw governor fingers.

There are no delicate parts nor any revolving parts that could become wrapped or wound up with wet grain. The feeder is not delicate in any way, it is said, but, on the contrary, is built extra strong and will outlast most old style feeders. It is equipped with a solid feeder web that carries all the loose grain into the machine and saves time lost by cleaning up when through threshing and does away with the breakage which often happens with slot carriers. The feeder knives are built extra strong also and the knife bars are adjustable so that they can be raised or lowered. They are also self sharpening.

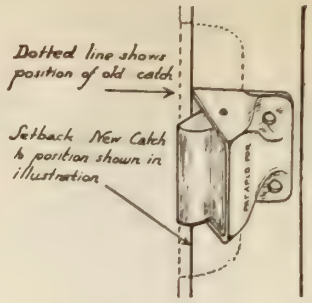
With a little attention to the accompanying cut, the action of this governor can easily be followed:

It is operated by a number of steel fingers (See "A.A") projecting upward from the feeder pan. When too much or too heavy straw is pitched into the cylinder, these fingers automatically press downward (See position of fingers "B. B"). This action, in turn, pushes the arm "C" and the hangers "D.D" forward until they are in the position "E.E". The retarding fingers "F.F" are then actuated and move forward to the position "G.G", thus reducing the space between them and the cylinder. This allows less straw to be fed into the cylinder. At the same time the Rod "H" moves forward to the action of the arms "D." releasing the clutch "I" and stopping the feeder carrier, so that no more straw is thrown into the feeding parts until the cylinder takes care of what is already there. The instant that the pressure on the straw governor fingers "B.B" is released, they automatially return to the position "A.A". The retarding comb is drawn back and the carrier again starts in motion. This governor does not take the place of the regular speed governor, but works in conjunction with it.

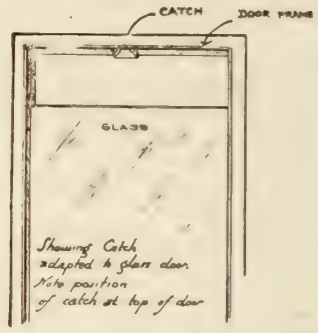
Section of Water Jacket Before Welding by Allan Polly-Phase Welder



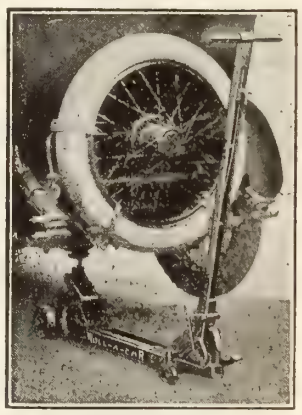
Same Section After Being Welded with Polly-Phase Arc Welder



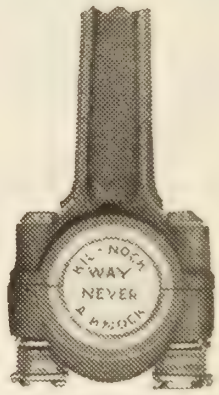
Victory Auto Door Catch



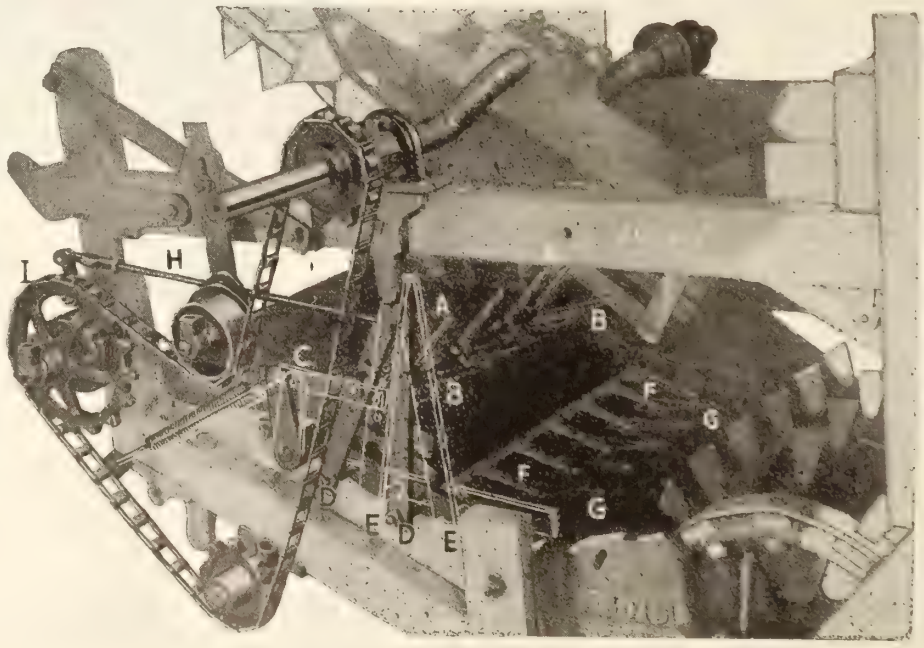
Victory Auto Window Catch.



Roll-a-Car



Kil-nock Bearing Adjuster



Avery Duplex Automatic Straw Governor

POLLY-PHASE ARC WELDER

THE Allan, three-phase, alternating current, electric arc welder, type B-L.C. serves a double purpose in the art of electric welding. It is designed for general automobile repair work, and for establishments where very heavy and extensive welding is not essential.

It has two sets of heat arrangements, one set giving a "semi-arc", the other a "full arc". The purpose of the semi-arc arrangement is for the welding of cracked water jackets, scored cylinders, the building up of valve seats, and for general cast iron weld.ng requiring machining over welded sections. A nickel-alloy metal is employed, which metal has a higher melting point than that of cast iron, and leaves a soft weld. No preheating of materials to be welded is required. Cracked water jackets, it is claimed, can be welded without the dismantling or removal of block from the chassis.

The full arc arrangement is for the general welding of broken auto frames, axle housings, axles, gears, hangers, etc., the building up of worn shafting, the diameter reduction of worn bores of pinions, gears, etc., without preheating. It gives a short, steady arc, a necessary requirement for good welds.

The welder is of the alternating current transformer type constructed for any primary voltage and cycle. So compact, simple, light, portable, and has no moving parts. It can be operated from a standard ten horse power installation.

ROLL-A-CAR

THE Walker Mfg. Co. recently put on the market a very efficient garage jack known as Roll-A-Car. The entire action is controlled by a slotted handle trigger and a foot pedal. The leverages have been worked out to give a quick lift with short strokes. Six strokes of the handle raise the load 6 inches. Only by putting the trigger in the reverse slot and pumping down can the load be lowered, eliminating the danger of accidents from pumping against the lever on the jack handle.

When a job is left jacked up the Roll-A-Car can be set and left in any desired position. After a load is removed from the jack, the rack bar is lowered out of the way by tripping the back end of the foot pedal. Every operation is performed while standing. The length of the jack and the angle of the handle adapt it to any car or truck. The weight is 120 lbs. and the capacity 5000 lbs.

KIL-NOCK BEARING ADJUSTER

THE Kil-Nock Co. recently put on the market a device known as Kil-Nock Bearing Adjuster which they claim is a sure cure for knocking connecting rod bearings. It consists of a pair of specially designed bolts and nuts which take the place of those regularly supplied with the bearings. Interposed between the nut and the connecting rod cap is a blue steel piano wire spring which keeps a constant, even pressure on the cap, automatically compensating for wear as it occurs. In applying Kil-Nock all shims are removed as it is claimed that the semi-flexible effect of the springs renders shims unnecessary.

Speed — MONROE — Comfort — Sturdiness

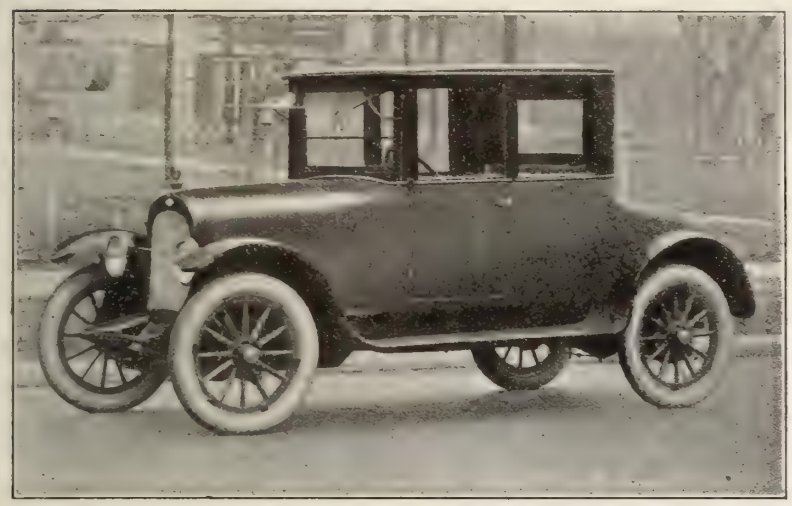
The Victory Car

(A New Canadian Car)

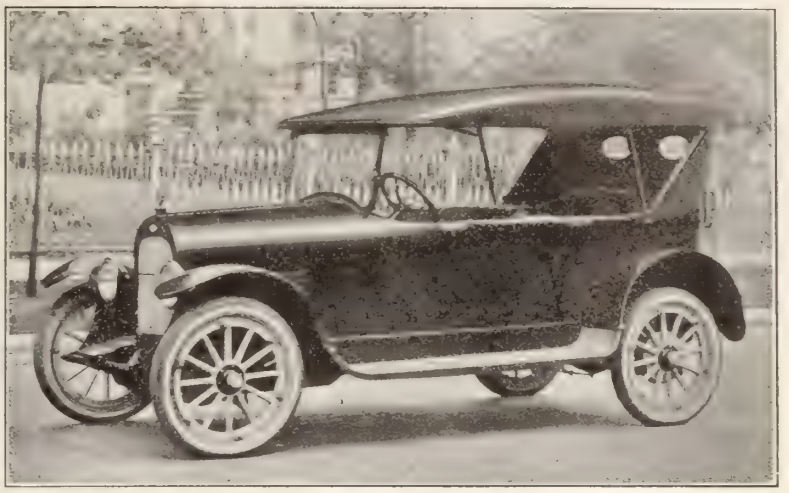
The principal features that made it a Winner at Indianapolis Speedway, May 31st, 1920, that 500 miles of terrible grind—the tryout of the Victory Car—have been adapted for road and urban use in the Victory Car. It is the last word in completeness, the exterior showing perfect symmetry of line and finish and the interior features that refined distinctive taste that is so appreciated by motor owners.

Write us about this agency

There are people in your town looking for a distinctive and thoroughly reliable car at a moderate price, and by writing us you can secure the agency and the profitable results it is bound to create.



Coupe and Sedan models equipped as the open models, but upholstered in beautiful blue broadcloth.



Touring and Roadster models are equipped with spare tire, front bumper, spotlight and combination mirror.

Agencies throughout the Dominion are now available. Your application will be given confidential consideration. Write or wire at once for your territory. Liberal discounts to live wires.

"Mention this paper in your letter"

Monroe Automobiles Limited

1-3 Park Avenue - Montreal

M&S

The Plug with the Hotter Spark

No. 500

The ball point of the "M. & S" spark plug concentrates the current and intensifies the heat. This gives a sure, hot spark—producing better combustion and greater power.

The "M & S" plug is made in all styles to suit every make of car—it is standard equipment on the popular Overland Model 4.

The "M & S" plug is made in Canada and guaranteed to give complete satisfaction.

Dealers—Ask your jobber for the "M & S" plug or write us direct.

No. 502

The Russell Gear & Machine Co., Ltd.,
1209½ King St. West, Toronto, Ont.

103

MADE IN CANADA.

THE VALUE OF THE "S. V."

TRADE MARK S.V. REG

The trade mark, "S.V.", that is stamped on every genuine "Vessot" Grinding Plate, has a distinct selling value. Farmers everywhere are well-acquainted with the grinding and long-wearing qualities of "Vessot" Plates. The presence of that "S.V." is to them an assurance of the very highest quality plates obtainable.

"Vessot" Feed Grinders are made in 9 sizes. It is a complete line.

Any branch office of the International Harvester Company can give you particulars of the "Vessot" Agency Plan.

Invented and Manufactured by

S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by

International Harvester Co. of Canada, Limited

Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina Saskatoon, Estevan, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John

Auto and Hardware Men Discuss Oil Sales at Saskatchewan Convention

AT A joint Trade Section meeting of the Automotive and Hardware Sections of The Retail Merchants' Association, held in connection with the Annual Convention at Saskatoon in June, to which the oil distributing companies had been invited to send representatives to discuss the question of selling to the consumer at the same price as to the retail dealer, after a general discussion, in which it developed that considerable difficulty would be met in obtaining a marginal concession for the retailer in the prices of coal-oil and gasoline, but that it might be possible to obtain a margin of 25 per cent. in place of the present 10 per cent. on greases and lubricating oils, the following resolution was put to the meeting and carried:

Resolved, that the oil companies be asked for an additional increase in margin from the present 10 per cent. to 25 per cent. on greases and lubricating oils, and that they protect the dealers to this extent.

George Morrison, chairman of the Hardware Trade Section took the chair and the meeting was opened by the reading of the resolution of the Automotive Section re wholesale companies distributing oil, coal oil and gasoline, to the consumer at the same price as to the retailer, which read as follows:

"That our Provincial office take up with the oil companies and inquire into the method in which they are selling gasoline at wholesale prices to individuals at the present time, and see if arrangements cannot be made to have it discontinued."

The representatives of the oil companies then gave their opinion as to the resolution.

The North Star Oil Company representative said his company would certainly be willing to co-operate in anything that might come up in this nature.

The representative of the Imperial Oil Company stated that their policy was outlined by the head office in Toronto, with whom this matter should really be taken up. They are selling in quantities of not less than a barrel, at the same price to farmer as retailer, feeling that in doing so they are helping everybody.

"You say we get cash for our sales," continued the representative, "and ask why can't the retailer get cash. Unfortunately nearly every retailer thinks that there is some man in his vicinity whom he considers a very good risk and as oil runs into money very fast he will buy a lot in a season and if there is only one man who the dealer is willing to finance and some adversity hits that man, there is no security. If two or three men do the same thing, that man is practically put out of business with helping these men. We think that a commodity of this kind that is universally used and which is necessary, should be sold to the user at the very lowest possible price."

The British American Oil Company representative addressed the meeting as follows: "We are operating at the present time 36 branches and we have in all about 200 odd branches in Manitoba, Saskatchewan and Alberta. Our policy resembles very much that of the Imperial Oil Company. We figure that if a man is farming we should get cash for all purchases which he makes of our products. When a merchant handles sales of coal oil, there is a great tendency on his part to give this man credit, and he seldom gets his money. If the man does not pay cash for gasoline it is a hard job to get money afterwards. When we're getting cash we are getting drums back much quicker than before. You say you want 2c lower price than we are selling to the farmer, or the man operating. If you ask for that it means simply the man who is operating that tractor is going to feel that he is being discriminated against and this lower price is helping to develop the country, and what we are after is to get in settlers. Men coming in from the U.S. or other countries are used to purchasing their goods on the same price basis as the merchant, and if you tell them that they have to pay 2c more than the merchant there is going to be a lot of engines tied up; and another thing, the average tractor owner is going to use, in a great many cases, more gasoline or coal oil than the merchant will buy and put through. The policy is to sell at the same price to the farmer as to the merchant. Our policy is set by the head office and we have to stick by that. A committee appointed should go into the matter with the head office of the different oil companies, which would be the best way you could bring this thing to a head."

The representative of the Prairie City Oil Company said:
"We are up against a very stiff proposition. We have to get a proportional freight rate on all goods shipped out in selling our coal oil. We think it would be fair to stand behind the retail merchants. We would like to have an expression of opinion if the meeting thinks that it is fair to have a flat rate on gasoline and coal oil."

General Discussion on Flat Rate

The price for coal oil and gasoline are the same all over Saskatchewan, except along the border of Manitoba. One member stated that he thought the dealers' associations should go to the fountain head of this work, have a committee and in the near future take up the matter with the people who have the power to make a decision on it.

Another member thought it was not wise to go after the 2c spread, but to leave it to the oil companies to sell all the oil and gasoline necessary, and if necessary peddle it around in gallons. (Laughter.)

One of the men present, who was an automobile dealer, said it might be all right for the retail merchant, but the automobile man has to make the revenue to cover overhead expenses, such as having a man on the floor all night, and how is he going to make it. It is absoutely necessary to handle it. The only thing that it can be made on is the lubricating oils and greases, as there is nothing in gasoline and coal oil.

One member asked if anyone found trouble in buying gasoline and coal oil by weight and selling by measure, and a great number had, and they thought a committee should point out this grievance. One man pointed out that the dealers should understand exactly what they want with the oil companies. He was not interested in handling coal oil and gasoline at 2c spread and does not think 2c is any good and didn't think we could ask more. He did not think that the dealers had any right to ask protection of 2c direct.

Perhaps the oil companies could give the dealers a little preference or at least give them a little better price and let go a little more of their profits, one man said. In other words give dealers a little commission, where they have tanks, as a little protection. One man pointed out that he knew of men who did not own tractors, but who got gasoline and coal oil for other uses at this price. It was pointed out that it was hard to distinguish between tractor owners and men just buying it.

One of the representatives said oil companies could hardly refuse a man a few gallons of gasoline for his car after he had bought a lot of other stuff. A member pointed out that most agents did not give them less than barrel lots. The representative said it was given in less than barrel lots to draw trade, perhaps competition.

Mr. Morrison did not think that anybody should sell to wholesalers and farmers without some difference in price. He believed oil companies were willing to co-operate with the dealers if the dealers put it up to them. One man thought the profits on grease, etc., should be increased from 10 per cent. to 25 per cent.

It was thought that the oil companies would not stand for 2c spread on price but might consider the additional gross margin on greases and lubricating oils. It was also pointed out that when gasoline is bought at noonday, when it is hot it expands and then when it is put down in the cellar, where most of the tanks are, it shrinks, thus there is a great loss. One man tried out eight barrels, which he had bought by weight, to see when measuring it how much he lost per barrel and he found that 2½ gallons was the least loss of any barrel.

One of the representatives asked if there was any other practical way the dealers could suggest to fill tanks than by measure.

"Is there anyone here," said the representative, "who has bought oil and has actually measured it and complained to the oil company and has received no satisfaction?" One delegate said that he had tested his oil tanks at different times and found that they lose from three to four gallons on the hundred.

MACHINES MUST RUN AT PROPER SPEED

A machine is designed to be operated at a certain speed or with only a limited variation either above or below this speed. It will do its best work when operated at this speed and if it is operated at any other speed, the best results will not be secured and often serious failure will result. For instance, the gas engine may be designed to operate at a maximum speed of 500 revolutions per minute. It may be uneconomical and perhaps dangerous to run it at a speed faster than this. The lubrication, the reciprocating parts, the fly wheel and the bearings have all been designed for pressure and strains resulting from this speed, and if it be exceeded, something is likely to break.

With power units and power driven machines fast coming into wide use, it is necessary to give careful consideration to the matter of speeds. Tractors are made with different size pulleys, running at different speeds. The same is true of power driven machines of the same class. For instance, one ensilage cutter may have a 10 inch pulley, supposed to run at 700 revolutions per minute, while another one may have an 8 inch pulley, supposed to run at 900 revolutions per minute. It is clear that confusion is sure to result if the machines are connected up without looking to see what size pulleys they possess.

Manufacturers, engineering societies and users are all interested in the proposals which are being made to standardize belt speeds and final action is very close on the adoption of the following speeds: 1500, 2600, 3000, 3250 and 3500 feet per minute.

It means that manufacturers will have to carry fewer pulley sizes in stock and buyers of machines will obtain not only the indirect advantage resulting from this, but the great advantage of not having to change pulleys when it is desired to use certain machines.—Power Farming Bureau.

TO MAKE INTERNATIONAL TRUCKS AT CHATHAM

The International Harvester Company, Limited, has announced that their plant at Chatham, Ont., is being equipped to commence the manufacturing of International motor trucks. These trucks have heretofore been imported from the United States, but the company has found it necessary to establish a factorf in the Dominion. The Chatham plant has been devoted to the manufacture of wagons and sleighs in the past.

TRACTOR PLOW ADJUSTMENT

HERE are a few simple yet essential rules for the adjustment of plows for tractor plowing which will be useful to the tractor dealer.

1. Adjust the springs till the weight of the plow beams and bottoms is practically balanced.
2. Hitch plow at a point on tractor drawbar midway between horizontal centre of tractor and horizontal centre of plow.
3. Adjust vertical position of hitch so as to be substantially level in working position.
4. Set levers for first position and open first furrow.
5. Change levers to working position.
6. When plowing is finished, set levers in transport position and take plow and tractor to nearest shelter.

NEW AGRICULTURAL USE FOR ELECTRICITY

FIELDS planted with electrified seed grain are being carefully watched in Southern Alberta this summer, says the Power Farming Bureau.

A plant for the treatment of seed by this electric process was established at Carmangay. It was taxed to its full capacity and will be enlarged immediately. The electrification of seed, it is claimed, will increase the harvest yield, eliminate the germs of fungoid maladies, and improve the quality of the grain.

The process consists in placing the seed in a bath containing metallic salt such as calcium or sodium chloride and weekly electrifying the liquid. After the electric current has played over the grain a certain fixed time, the solution is drained off and the seed dried.

The object of the salt, it is said, is not only to decrease the resistance of the seed coat but to maintain conductivity during the period of germination. Calcium and soldium chloride in correct proportions, it is declared, stimulate the growth and give strength to the new roots.

The new process has created widespread interest among farmers in this part of Western Canada and many of the largest wheat growers of the region, which is a heavy grain producer, have sowed hundreds of acres this year with electritied seed.

ONE THOUSAND SILOS FOR PRAIRIE PROVINCES

IT IS estimated that one thousand silos will be built in the three prairie provinces of Canada this year, says a report from the Department of Colonization and Development Canadian Pacific Railways. It is reported that one firm in the States, which has made a specialty of erecting silos, have secured orders for two hundred of these structures to be erected in Manitoba alone. Saskatchewan farmers will build several this season while in the southwest of Alberta, where fifty silos were erected last year, another fifty will be built this summer.

I. H. C. TRACTORS REDUCED

THE International Harvester Co. have announced a reduction in the prices of Titan and International tractors. The new prices are now in effect.

Both the International 8-16 and the Titan 10-20 have been reduced $135 on the f.o.b. prices at Hamilton, London, Ottawa, Montreal and Quebec.

ELECT NEW OFFICERS

AT a special meeting of the Canadian Consolidated Rubber Company, Ltd., approval was given to an increase in the number of directors from fifteen to sixteen and some changes were made in the personnel of the board. R. E. Jamieson retired from the board at his own request and was succeeded by J. A. Connor who will be director in charge of sales.

The additional place on the board was filled by the election of George W. Charles as director in charge of manufacturing. The two new directors have both been connected with the company for some years.

MAYBE ADAM LAUGHED AT THESE

Doctor: "I'm afraid I will have to operate for appendicitis."
Little Beauty: "Oh, Doctor, will the scar show?"
Doctor: "Not unless you go into the movies."—Loew's Weekly.

"How is your new hired man?"
"Well," replied Farmer Jones, "he broke two hoe handles yesterday."
"Working so hard?"
"No, leaning on 'em."—Life.

Salesman: Another advantage of this machine, madam, is that it is fool proof.
Sweet Thing (placidly): No doubt, to the ordinary kind. But you don't know my husband.—Tit-Bits.

"We are not beating our swords into plowshares."
"Can't somebody invent a combination sword and plowshare?"—Louisville Courier-Journal.

"Do you suppose we will ever have complete disarmament?"
"I am afraid not. Even though other nations all agree to it vacci-nation will still be in arms."—Boston Transcript.

School-teacher (to little boy)—"If a farmer raises 3,700 bushels of wheat and sells it for $2.50 per bushel, what will he get?"
Little Boy—"An automobile."—Western Christian Advocate (Cincinnati).

Mrs. Gramercy: My husband can't sleep on account of the business depression.
Mrs. Parke: Just look at me. I have to ride around in an old car and Fido is two breeds out of style.—Life.

Lady Art Critic (to distinguished painter): Are you doing anything in the nude now, Mr. Van Dauber?
Van Dauber: Only bathing, Madam.
—Life.

"Say, waiter, is this an incubator chicken? It tastes like it."
"I don't know, sir."
"It must be. Any chicken that has had a mother could never get as tough as this one is."—Southern California Wampus.

"You seem to have been in a serious accident."
"Yes," said the bandaged person. "I tried to climb a tree in my motor car."
"What did yon do that for?"
"Just to oblige a woman who was driving another car. She wanted to use the road."—Pittsburgh Chronicle-Telegraph.

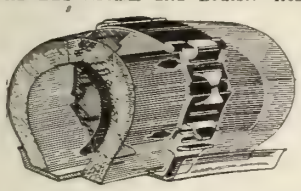
Scotch Parson (to his gardener)—"Tammas, ye've got a fine wee hoose here an' a gran' garden. Why don't ye get a wife to complete it? The first gardener that ever lived had a wife, ye ken."
Gardener—"Aye, but he didna keep his job lang after he got the wife!"—Passing Show.

First Hack Writer (in his garret): Behold me highly elated! I have just placed a piece—
Second Hack Writer: Ah! At the Comedy Theatre?
"No . . on the seat of my trousers."
—Le Journal Amusant (Paris.)

She:—That inspirational lecturer said that one's success in meeting a coming crisis depends upon one's ability to keep from dwelling on it beforehand.
He:—I believe it. Not once have I permitted myself to think about kissing you to-night.

The Parson (at table, to fellow boarder): My dear sir, theology does not teach the existence of a literal hell, but merely that a potential hell lies within each one of us at this moment.
The Landlady (overhearing): You force me to remind you, Mr. Smith, that you may leave at once if you are dissatisfied! — Passing Show (London).

Broughton's Blowout Boots
Made of flat freely-hinged STEEL.
Bind Bad Breaks and Bruises Best.



This cut shows straight side type of Boot on a section of straight side tire. They are made for clincher tires also. They hold the tire neatly. Wear for thousands of miles. Centre plate is easily renewed when worn. Best to carry for emergency. Sold by all Canada's leading jobbers. A purely Canadian product. **Dealers**:—They are repeaters. We guarantee each B. B. B.

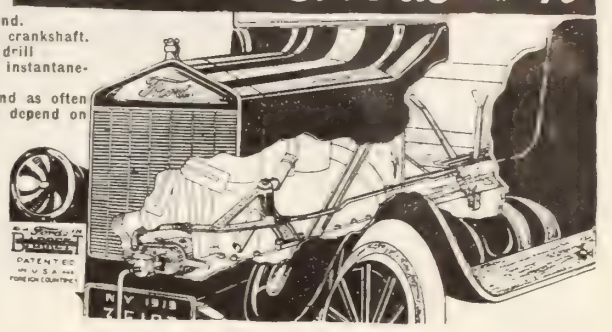
The Geo. H. Broughton Co., Mfrs.,
126 Wellington St. W.,
Toronto, Canada.

Our 1921 exhibit at the Canadian National Exhibition will be in South-west corner of Motor Accessories Building.

Simple, Durable, Economical, Reliable,

BARRETT SELF STARTER AND PRIMER
GUARANTEED FOR FIVE YEARS — For all Fords — $40

RELEASES automatically in case of backfire and does no harm to the operator. No cables, no chains, no engine or starter. pulleys and no springs to wind. 75% increase of leverage on crankshaft. Easy to install, no holes to drill It STARTS COLD ENGINE instantaneously even in zero weather. Ready for starting any time and as often as wanted because it does not depend on th running of the engine for power. All essential parts made of the very best steel. ABSOLUTELY NOISELESS. Not a luxury but a necessity. Endorsed by prominent automobile engineers and mechanical Ford experts as mechanically perfect in every resp ct and the best that has come under their observation. The Special Primer which is supplied free with every Starter, vaporizes the gasoline direct into the cylinders, assuring a quick, positive start. The Primer is also operated from the seat.



From agents or direct from
IMPERIAL AGENCIES, 195 Victoria St., TORONTO

GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

Add Our Spring Service To Your Business

We can take care of new or repair work in any phase of the Spring question. We also make springs to order, straighten axles and chassis frames on any car or truck. Write for our Proposition to Dealers and Garagemen and then let your patrons know you can give them this service.
"It Will Pay You."

Special Springs Made-to-Order

COZENS & MAYNARD
Automobile and Truck Spring Service Station,
4 to 6 Wood St., Toronto

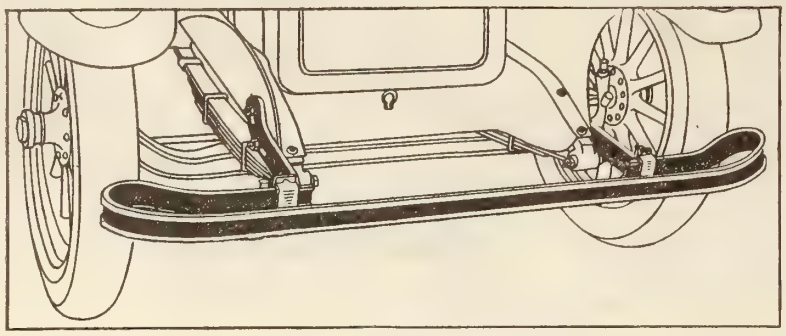
Does Away With Door Slamming!

VICTORY AUTO DOOR CATCH
Stops vibration of any auto door or sedan window.
Easily attached. Meets an acknowledged need.
This Is the Only Device of Its Kind on the Market

Positively Prevents Rattling!

Retails at $1.00 per pair. ATTRACTIVE DEALER PROPOSITION Write For Particulars
VICTORY AUTO ACCESSORIES, LIMITED, 414 - 416 Continental Life Building, TORONTO.

"Hercules" Bumper Is Easy To Sell



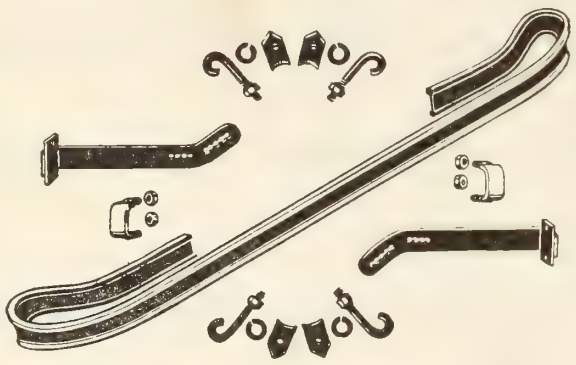
It pleases every motorist because

-- Hercules combines strength and resiliency.

-- it is light weight but able to withstand shock.

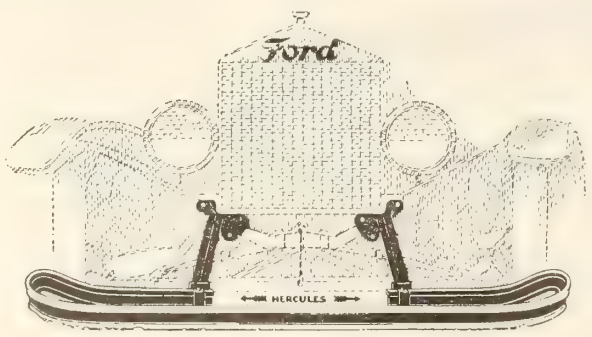
-- It is a fine appearing bumper

-- It is easily adjusted to fit to any car.



"Hercules" will please you because it is easy to sell —there is only one style and no confusion in customer's mind. It is a profitable proposition from beginning to end.

Write now for the "Hercules" sales proposition from the manufacturers.



HERCULES BUMPERS LIMITED

4 and 6 Spadina Avenue, Toronto

Dairy *and* Household Supplies

EVERY TRACTOR OWNER A SILO PROSPECT

As soon as a farmer purchases a tractor, he becomes a live prospect for a silo if he hasn't already got one. The tractor has a direct influence in increasing silo building on farms and the dealer who is wide-awake will cash in on such sales. All progressive farmers either own a silo or at the first opportunity intend to instal one.

A farmer who purchases a tractor is surely progressive and should top the dealer's list of silo prospects.

The rapid increase in the value of farm and pasture lands has added greatly to the cost of producing milk and meat. The old fashioned methods of grazing and of feeding grain are no longer economical. The cost of producing can be materially reduced by the feeding of silage.

Experts say that the value of a crop for feeding purposes, by the use of a silo, is increased about 40 per cent. over that of a crop harvested in the usual way. It is estimated that two cows can be kept by feeding silage at the cost of one cow from the same acreage, fed on hay or other roughage.

Convenience of feeding is another strong argument in favor of the silo. Ten tons of silage can be stored in the same space as one ton of hay. Silage is the cheapest feed that can be produced, as well as the best, and is a certain supply the year round, regardless of drought, rain, frost or snow.

A silo is the cheapest method of handling a crop, of storing it, and, finally, the best method of saving and realizing the fullest value of the crop as feed.

The use of silage as a winter feed is so general and so well established as to require little mention. By means of this green feed the animal remains not only in the same fine physical condition which it has attained on summer pasture, but also continues to thrive and to grow throughout the winter. Dairymen everywhere are taking advantage of this fact and are installing silos thereby reducing costs and increasing profits.

The dealer should make himself thoroughly familiar with silage and its uses and the crops available for silage. He should also make an intensive survey of his territory for silo prospects.

Some thought should be given by the dealer to the proper location of the silo. The practice is to locate the silo next to the barn, with the chute facing it so that the silage may be carted or taken in the overhead feed carrier to the stalls with a minimum of labor. The chute and barn are connected by a short passageway into which the feed carrier can be run. If the barn has a centre feedway it is a convenient arrangement to locate the silo at its end so that the silage car can be wheeled directly under the chute. A south location, if possible, should be chosen and good firm ground is necessary to support the great weight of the filled silo.

ADVANTAGES OF MACHINE MILKING

WILL a milking machine keep a cow up to her full flow of milk for the days milked? Will it keep the cow in her lactation period for the full length of time? Will it save time?

These questions are asked and answered by W. J. Dougan in Hoard's Dairyman. Mr. Dougan proceeds in part as follows:

I put in a milker in 1919, and was in a particularly favorable position to give the machine an actual test. I had weighed the milk from every cow at every milking for ten years; for five years I had classified and averaged up the weights until I know what a cow ought to do, and I had the figures down in such form that I could easily compare them.

I had spent a lot of money getting these data, and I was extremely anxious to carry on another year's test comparing the results from the milking machine with hand milking. The following gives the results of the test, the average being for the entire herd per day per cow milked :

	Lbs.
Average for 1919 (machine milking)	21.3
Average for 1918 (hand milking)	19.5
Average for 3 years (hand milking)	19.4

The above is the answer to the first question: "Will a milking machine keep a cow up to full flow of milk while milking?"

In getting the above information, we averaged the milk from 40 to 50 cows in all stages of the lactation period. To avoid any mistake in event that 1918 might have been a low year, and 1919 an especially good year, we averaged the three years preceding 1919 and it gave us 19.4 lbs. From my experience, I know this is a good fair average for my herd, for if I should get much below 20 lbs. I would know that something was wrong, or if I should get much above 20 lbs., I would know that something was not exactly right. This shows that there was an increase of about two pounds a day per cow by machine milking over hand milking.

This takes into consideration every cow that was milked in the herd for any length of time, if even for only a day.

The average yield per cow per day while milked could be true and yet the machine could be a failure if in hand milking the cows milked regularly the full lactation period giving 19.5 lbs. as against 21.3 with machine milking for a shorter period; in other words, if the machine did not keep the cow up to full lactation period it would be a failure. I have found a good many farmers who change to hand milking when the cows give only a small amount of milk, saying it doesn't pay. From my way of thinking, when the cows are beginning to dry up is when the machine is most valuable.

To substantiate this claim, I found that by hand milking, 27 cows throughout the year averaged a lactation period of 287 days while by machine milking 34 cows averaged 311 days, and by machine milking the cows averaged 1,100 lbs. of milk more per year which was due to this lengthened lactation period, and the gain in daily yield.

From my experience, and knowing the quality of my figures as I do, it proves to my mind conclusively that the mechanical milking machine is certainly a success because we can milk cows mechanically so as to keep them up to the full lactation period and give even a better flow of milk per day than we can by hand milking.

My hand milkers have always been passably good milkers. I pay good wages and get intelligent men who never shirk their duty, and at the head of the work I have always had a high priced, intelligent herdsman, who will go after the men and see that they milk right. From these tests, it will be seen that the machine milker has not only lengthened the lactation period, but has also increased the flow of milk per day.

Regarding the machine as a time saver, I found that the work of milking my herd of 40 to 50 cows was carried on more regularly, in shorter time, and with no interference in field work. It saves about two-fifths of the man hours in milking.

However, the direct increase in value of the milk is not the only consideration. Any machine may at times fail to milk all quarters evenly. The stripper detects this, keeps the udders in better condition, and makes good wages directly in the increase of butterfat.

TRACTORS PROVED CHEAPER THAN HORSES IN FIELD WORK

THE first authentic figures ever compiled on the relative cost of horse and tractor power have just been announced by the Supervising Observers Committee in charge of the recent Fargo Farming Demonstrations.

These figures show that it costs $1.297 per acre to plow and prepare a seed bed by tractors and $2.41 to do the same work with horses under farming conditions in North Dakota, plowing 5 inches.

The following are actual costs: Kerosene 11.8 cents per gallon, gasoline 23.1 cents per gallon, lubricating oil 65 cents per gallon, hay $13.00 per ton, oats 40 cents per bushel, and labor 40 cents per hour. No labor or shelter charges are included and no consideration was given to depreciation, or the fact that horse maintenance goes on the year round, but tractor maintenance covers only actual time of operation.

The comparative tests between horse power and tractor power were made on adjoining tracts at the same time, and the records were taken by a Supervising Committee which included Dr. E. A. White, President, American Society Agricultural Engineers; Professor J. B. Davidson, Iowa State College, Representing Agricultural Colleges, and O. W. Young, Society of Automotive Engineers.

CANADA HAS HORSELESS FARM

THE horseless farm has arrived. It is operated exclusively by machinery. It is the first of its kind in Canada—first of its kind possibly in the world. Many believe it is the forerunner of an era of horseless farms.

The farm of Schaal & Schaal, twenty-five miles southwest of Winnipeg on the Canadian National Railways, contains 10,200 acres and is not only horseless, but cowless, sheepless and hogless. It has not a single head of livestock on it. Not a work animal has been used on it in its four years of successful existence.

The Schaals, father and son, do all their plowing, seeding, harvesting, threshing and transportation of grain by tractors. Four hundred horses would be necessary to do the work accomplished by the fleet of tractors. Three complete threshing rigs are a part of the regular equipment. Forty tractors, each pulling two 14-inch plows are used in plowing time. They turn over one acre of land every two minutes. Tractors are used again in disking the soil to prepare it for seed. Twelve-foot drills drawn by tractors seed 640 acres a day.

During harvest, the grain is cut and shocked at the rate of a section a day. A large number of automobiles are used at seeding and harvest time to transport farm hands from one part of the farm to another. Any part of the farm is within fifteen minutes of any other part.

"Four years' experience," said the elder Mr. Schaal, "has convinced us that the cost of grain production is greatly cheapened and the profits consequently largely increased by horseless farming."

GET CASH FOR IMPLEMENT REPAIRS

THE IMPLEMENT Section of the Saskatchewan Retail Merchants' Association has prepared a series of articles which are being sent to the trade in the form of circulars, in an endeavor to get the dealers to obtain cash for all implement repairs. The following is one of the series:

You have no doubt one of those little signs occupying a prominent position on the wall of your office, which reads, "Repairs are Cash," but does it mean what it says to you and your customers? You pay cash for the repairs or if you don't you have an overdue account with the implement company and your credit necessarily suffers.

One of the largest companies in a recent letter says:

"We are living in constant horror of big, open balances caused by dealers letting repairs out on time. There is more loss and disappointment among implement dealers from this cause than any other, and there is more wastage and loss of profit in this than there is in all the clauses of the contract."

This letter rather exaggerates the loss entailed, but isn't this one of the leaks which the implement dealer would do well to plug? Can you afford to be your customer's banker?

The answer is, if you can, you should be in the banking business. You would then be able to cover your loans with ample security, whereas in paying cash for repairs and selling them on time, you get no security and are actually loaning more than your original investment and the price you are asking for the repairs, because your margin will not cover collection expense and bad debts.

If the banker will not advance your customer sufficient credit to enable him to purchase the necessities of the farm—for that's what repairs are—to enable him to pay cash for his repairs, why should you? Are you a better judge of his financial responsibility than the individual whose profession it is to do so?

If you are fair with yourself in rendering a decision on the above question there is only one answer for future use, and that is REPAIRS ARE CASH, and make the little sign mean what it says.

You know all the above and you know also that if your contract says three bad accounts of $20.00 each, you have lost your profit on approximately $1,200 of repair sales. How do we arrive at these figures? Well, your overhead ranges around 20 per cent. in handling repairs and as the average commission is 25 per cent., your net profit is 5 per cent. $60 is 5 per cent. of $1,200, hence the statement above.

Plenty of dealers are already getting cash for their repairs and so can you, thereby saving time, trouble and worry to say nothing of being able to keep your credit good with the companies.

Don't let this go "in one ear and out the other." Brush the dust off that card and make it talk to your customers.

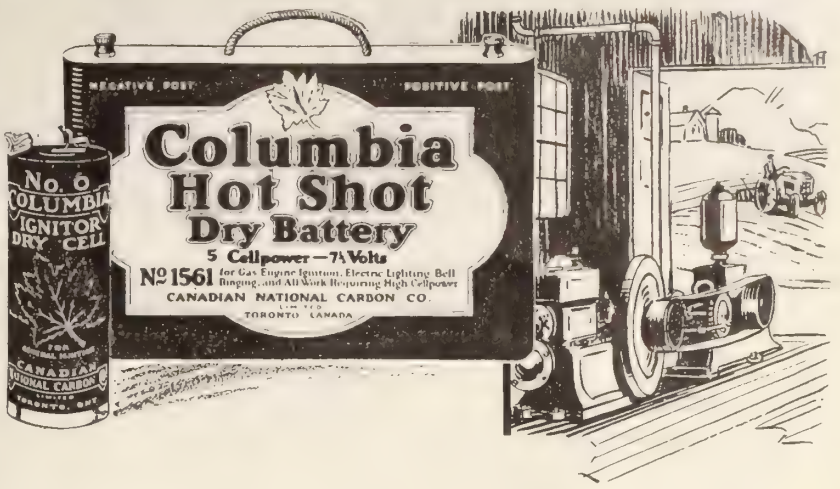
WHAT CONSTITUTES A GOOD SEED BED ?

"WELL BEGUN is half done." Preparing a good seed-bed is half the job of raising a crop, says the Power Farming Bureau.

What are the qualifications of a dependable and desirable seed-bed? Briefly, ground that has been well plowed, then worked in such a way as to settle the furrow slice back to the subsoil allowing the static water to come back quickly, allow capillary movement into the seed-bed, and retain it there to the greatest possible extent.

To utilize the fertility of the soil, which can be utilized only in liquid form, the ground must be firmed, all open air spaces tamped out to stop evaporation; all clods should be crushed and pulverized so that the soil particles are in contact to as great an extent as possible, and with the top surface left in a fine mulch to act as a blanket for the conservation of moisture and the prevention of evaporation. As the modern grain binder has shown its superior efficiency over the old time cradle in the harvesting of crops, so has the modern corrugated roller demonstrated its superiority in certain soils over any other single tool in seed-bed preparation. It has the further advantage of being advantageously utilized also in mulching grown crops such as wheat, oats and alfalfa when no other tool could be used in the field. It is a simple machine. Its operation is of the simplest and its maintenance is practically zero.

It is one of the best tools the farmer can have and it is one that adapts itself particularly to power farming since it can be obtained in a wide variety of sizes.



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This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

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Auto Top & Equipment Co., 270 Dundas St. W., Toronto.
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Burd High Compression Ring Co., Rockford, Ill.
Cozens & Maynard, 4-6 Wood St., Toronto.
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Imperial Agencies, 81 Victoria St., Toronto.
Lamontagne, Ltd., Montreal.
Motor Mart of Montreal, Montreal, Que
Shaw Auto Salvage Parts Supply Co., Toronto.
Manufactures Canadian Service, Ltd., Montreal.
Willys-Overland, Ltd., Toronto.
Victory Auto Accessories, Ltd.,Toronto

AUTOMOBILE LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILES
Motor Mart of Montreal, Montreal, Que.

AUTOMOBILE TIRES
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BEET MACHINERY
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MOTOR VEHICLES CUT LUMBER WOODS COSTS

THE day of the horse is passing in the lumber camps.

The cost records of the horse compared with the records of the motor vehicle in several recent carefully checked tests, show that the use of power equipment cuts the cost of log hauling as high as 70 per cent.

These figures were presented by practical woodsmen during the recent convention of the Woodlands Section of the American Paper and Pulp Association, who have been forced to substitute power operations for animal hauling by the far greater economy of the motor hauler.

The figures given by these operators apply equally well to lumber operations as to woods camps of the paper industry, for the hauling problem is identical in both types of cuttings.

O. L. E. Weber, of the Watab Paper Company, Sartell, Minn., told of extensive use last winter of tractors, under conditions where horses could not be used at times, but he made his comparison of costs on the basis of horse equipment on passable roads. He figured that a 10-ton tractor would do the work of 36 horses, and a 5-ton machine of 16 horses. He made his cost comparison on the basis of 5,000 cords of pulp wood, 35,000 tamarack and cedar ties, 30,000 cedar posts, and 750,000 feet of Norway pine where he actually used tractors, but where he estimated the cost of horse operation under conditions of previous years. The cost of the job with tractors was actually $3,150. The cost with horses would have been $10,100, including cost of equipment in both cases.

Stanley H. Sisson, of the Racquette River Paper Company, operating in Northern New York, told of hauling 23,000 cords of 16-foot peeled wood 10 to 12 miles, an average of 65½ cords per day per tractor, handling 15,000 cords in 38 days. His comparison with horse equipment was as follows: One team hauling 9 cords per trip, double headers at landings, costing $15.50 per day, or $1.72 per cord. The tractor cost, on a basis of 60 cords, with two trips daily to landings, was $43.06 per day, or $.717 per cord. He, like the other woods superintendents, said that care in repairs and maintenance of tractors was vital to their successful operation, and also urged care in despatching trains of sleds or wagons, with extra equipment being loaded or unloaded while the machine was on the road.

C. L. Tolles of the Phoenix Manufacturing Company of Eau Claire, Wis., giving figures for a steam hauler, with long trains of sleighs, said that the motorized cost was only about one quarter that of horse operations.

E. A. Drott, of Drott & Newall, handling another Wisconsin logging operation said his motor hauling cost him $1.50 per thousand feet of lumber, board measure while natives using horses were forced to pay $10, and then failed to get all their timber out. This was on a 10½ mile haul, and on a 7½ mile haul, the motor equipment cost $1 per thousand, as against $7 for horse hauls.

CANADA AND BRITAIN CAN WORK TOGETHER TO ADVANTAGE

SPEAKING on the subject of "Reciprocal Trade with Canada," Sir Peter Rylands, President of the Federation of British industries, comments as follows:

"In the first place, the United Kingdom needs Canadian products. The British Isles are dependent upon supplies from overseas both for raw and semi-manufactured materials, to keep its factories working, and for food for its 50,000,000 inhabitants. Great Britain can never hope to supply her own requirements, either in the way of food or raw materials; both must be imported from abroad.

Canadian Products Needed.

"Canada, one of the world's greatest existing granaries, is in a position not only to supply food for the teeming population of industrial Britain, but to a large degree those raw materials of which the industries of the north stand to need. The Dominion is one of the richest potential sources of minerals and timber. Her vast natural wealth in iron, lead, copper and silver, is still to all intents and purposes, unexploited. She is already the world's largest producer of nickel, corundum and asbestos, while her wealth in timber is larger than that of any other country in the world.

"All these products are needed by Great Britain. From what source could they be more conveniently obtained than from Canada, which of all the countries within the Empire is within easiest touch of the great west coast ports, such as Manchester, Glasgow and Liverpool. The United Kingdom must pay her bill for food and raw materials by exporting her manufactured articles, of which Canada, as a country still relatively undeveloped, stands in need.

"This raises the second point, that Canada needs English goods and English capital for her development. The industrial prosperity of Canada will depend to my mind, upon her successful resistance to foreign competition, which may be confidently expected to become increasingly fierce as the years go on. Standing alone, the danger exists that the growing industries of the Dominion may be swamped by the activities of her competitors. This danger may be appreciably minimized by the British Empire presenting a united front to competition from outside it. The Empire is able to do this owing to the fact that it is in reality an economic entity; in other words—the requirements either in raw materials, foodstuffs, or manufactured goods of one part of the Empire can in almost every case be supplied from some other member within the Imperial comity. Everything that can be done to strengthen inter-Imperial commerce must react to the benefit of Canada.

Should Erect Factories

"Any increase in the exchange of goods between the United Kingdom and Canada will make for a better understanding and better relations, but manufacturers in Great Britain can also help in the development of the Dominion by investing capital in Canada. One of the most important ways by which this can be effected is by the erection of British factories there. The United States has already recognized the importance of such action and it is significant that in 1919, in the city of Toronto alone, twenty-one American branch factories were opened as against one British. In fact it is only to be expected that the United States favored as she is by her geographical juxtaposition, will do everything in her power to exploit the great riches of the Dominion.

"Difficult though it may be at the present moment for industrialists in the United Kingdom to find the capital necessary for opening up works in Canada, it should not be lost sight of that the chance of securing a share for the United Kingdom in the great industrial future of Canada, which exists to-day, may be gone to-morrow

"From both standpoints, therefore, it is to the best interest of both nations that every effort should be made to strengthen the commercial ties between them."

GROWTH OF ONTARIO'S AUTOMOBILE POPULATION

EVIDENCE of the tremendous growth in Ontario's automobile population is contained in the departmental estimate of the distribution during 1922 of 225,000 pairs of automobile license numbers. This is more than 25,000 ahead of any previous year. When the Department of Public Works and Highways let contracts for 1921 markers they placed on order 165,000 pair. This number, however, proved far too conservative an estimate, and subsequently additional markers had to be ordered which brought the total up to nearly 200,000. An unofficial estimate of the 1921 motor license revenue is $3,000,000.

The new 1922 markers will have jet black raised figures, an inch larger than those of 1921, set on a white background.

A Big Oil Market For Every Implement Dealer—

IMPERIAL Lubricants are the most widely used farm lubricants in Canada. Each farmer consumes large quantities of them, too—practically every machine he owns requires lubrication

It's mighty convenient for farmers to buy their oils at the same place they buy their implements and supplies. Besides, they know they can rely on you to supply them with high quality oils that will keep the implements you sell working their best.

Years of advertising backed up by the highest quality in every grade have made Imperial Lubricants supreme in their field. Farmers are attracted to shops that carry them and trade is opened in every line the dealer handles.

Carry the full line of Imperial Lubricants and you can meet every need a farmer has. Tie up to our big advertising campaign, and make your store "Oil and Implement Headquarters."

Talk it over with the Imperial Oil salesmen and learn the details of our attractive dealer offer. You will find our proposition a paying one.

IMPERIAL

Lubricants

FOR ALL FARM PURPOSES

IMPERIAL POLARINE OIL
IMPERIAL POLARINE OIL HEAVY
For gasoline-burning engines—automobiles, tractors and trucks.

IMPERIAL POLARINE "A"
For motors requiring an unusually heavy oil.

IMPERIAL POLARINE KEROSENE TRACTOR OIL
IMPERIAL POLARINE KEROSENE TRACTOR OIL EXTRA HEAVY
For kerosene-burning stationary engines and tractors.

IMPERIAL PRAIRIE HARVESTER OIL
IMPERIAL GRANITE HARVESTER OIL
For open bearings of separators, binders, etc.

IMPERIAL CAPITOL CYLINDER OIL
For steam cylinder lubrication—tractors and stationary engines.

IMPERIAL GAS ENGINE OIL
For stationary or portable engines using kerosene or gasoline.

IMPERIAL POLARINE CUP GREASE
IMPERIAL THRESHER HARD OIL
For grease cup lubrication—clean, solidified oils.

The **Imperial Charts of Recommendations** indicate exactly what grade of **Imperial Polarine** will give best results from any type of tractor or automobile. Dealers should display them prominently. Write to 56 Church St., Toronto, for Charts.

IMPERIAL OIL LIMITED

Power - Heat - Light - Lubrication

BRANCHES IN ALL CITIES

OF SPECIAL INTEREST TO

Dealers, Garage Men and Mechanics

Automobile Equipment Building - Toronto Exhibition

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MADE IN CANADA

By Niagara Equipment Co. Limited

NIAGARA FALLS, ONT.

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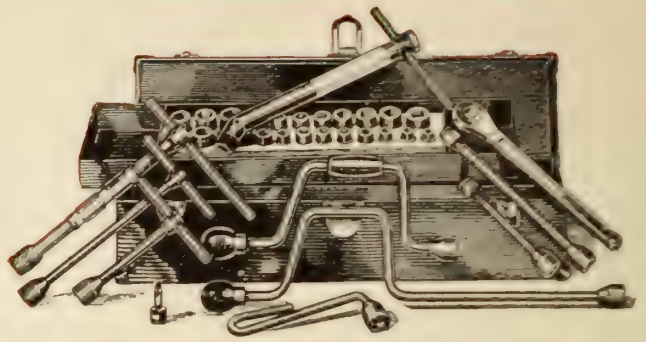
BILLMONT WRENCHES with Interchangeable Sockets



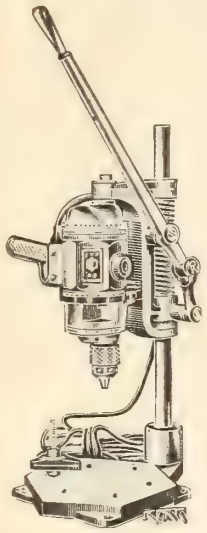
Manufacturers for British Empire

Russell Gear & Machine Co. Limited

TORONTO

Booths 26 and 27

BLACK & DECKER



Black & Decker Bench Drilling Stand (made in Canada) complete with Black & Decker Portable Electric Drill

PORTABLE ELECTRIC DRILLS *"With the Pistol Grip and Trigger Switch"*

OUR DISPLAY INCLUDES OUR NEW

PORTABLE ELECTRIC GRINDER

For Grinding Tools, Cleaning Welds and Castings, Buffing Tires, Polishing and a dozen other daily uses.

Canadian Factory and Office
MONTREAL

Complete Exhibit
Booth 25

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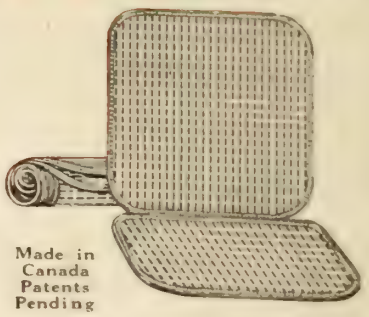

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COOL, CLEAN and COMFORTABLE
For Use
AUTOMOBILES, especially to protect light clothing from grease and dirt.
OFFICES, HOMES, PORCHES, LAWN SEATS, BY PICNICKERS,
EVER KLEAN CANOEISTS, BASEBALL FANS, Etc.
EVERYWHERE A CLEAN, COOL SEAT IS DESIRED.
SEAT PADS are beautifully made of highest quality Chinese or Japanese rice straw fabric carefully bound. Extremely durable. Can be rolled up and easily carried in the hand.
Size 17 in. x 17 in. seat with back the same size. Suitable for every purpose.

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AUTOMOBILE EQUIPMENT BUILDING
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Manufacturer's Canadian Service, Limited

A. J. HOPKINS President

392 St. James St., Montreal

ACE PRODUCTS

And Booths 25, 26, 27, 49 & 50

Automobile Equipment Building - Toronto Exhibition

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

MONTREAL, Southam Bldg. WINNIPEG, 901 Confederation Life Bldg. NEW YORK, 1133 Broadway. VANCOUVER, 314 Carter-Cotton Bldg., 198 Hastings St. W. BOSTON, 734 Old South Bldg. CHICAGO, 405-6 Transportation Bldg. LONDON, ENG., 88 Fleet St., E.C. 4

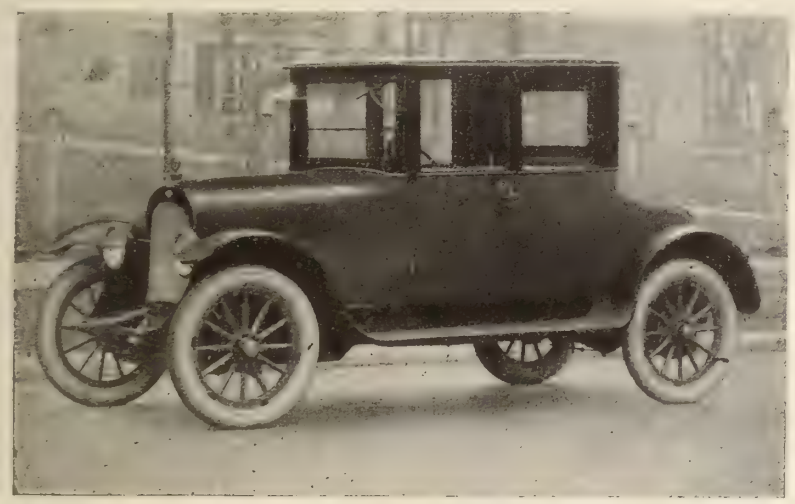
VOL. III, No. 9 TORONTO, SEPTEMBER, 1921 Subscription Price $2.00 Per Year

Speed MONROE Comfort Sturdiness

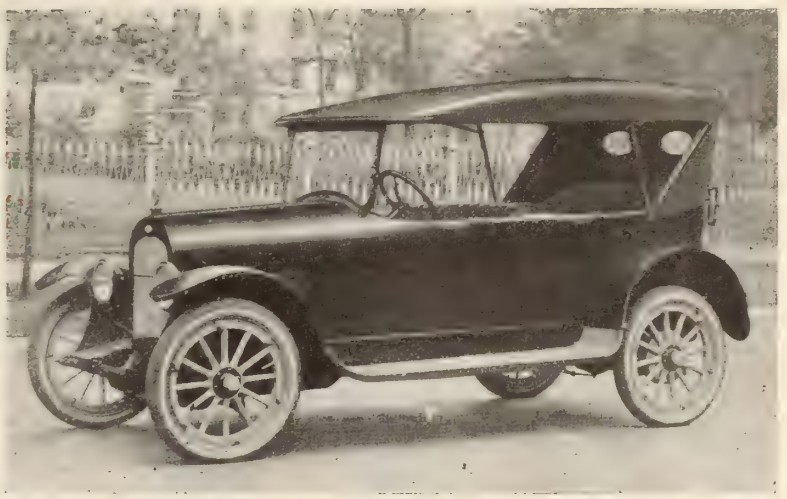
The Victory Car

(A New Canadian Car)

The all-round sturdiness and flexibility of this car were the principal features that caused its win over the Indianapolis Speedway 500 mile test on May 31st, 1920. These features have been coupled with a body of pleasing completeness--in all a thoroughly distinctive car at a very low price.



Coupe and Sedan models equipped as the open models, but upholstered in beautiful blue broadcloth.



Touring and Roadster models are equipped with spare tire, front bumper, spotlight and combination mirror.

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Agencies throughout the Dominion are now available. Your application will be given confidential consideration. Write or wire at once for your territory. Liberal discounts to live wires.

"Mention this paper in your letter"

Protect-O-Cap

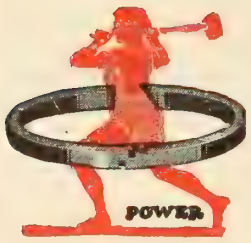
The trim outline and graceful curves of the PROTECT-O-CAP, coupled with the protection it affords, make it one of the easiest selling propositions anyone could wish to handle.

Write our accessory department for anything you may desire in auto accessories. If we cannot supply you we will put you in touch with the correct parties.

MOTOR MART of Montreal Limited

Telephone, Plateau 310 1-3 Park Avenue, Montreal

Gill



One-piece Piston Rings

appeal to thrifty motorists

because: they mean a saving in gasoline and oil; they prevent carbon and all consequent troubles; they prevent loss of power; they lengthen the life of a motor; and they assure a comforting peace of mind and security of pocket-book. Because Gill Piston Rings do all of those things unfailingly month after month, through thousands of miles of the most rigorous service, they pay for themselves many, many times over. As a result, Gill Piston Rings are always asked for by thrifty motorists.

MADE IN CANADA BY:

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415-19 King Street, West Telephone Adelaide 425
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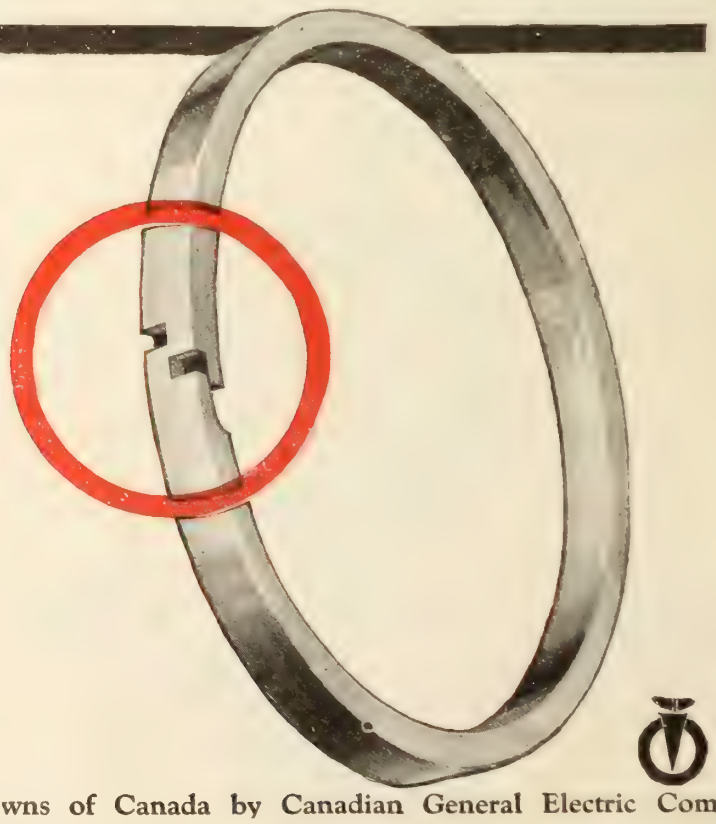

Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint ***alone.***

Gill Piston Rings are obtainable for every make of internal combustion engine manufactured. In case you are unable to secure Gill Rings, we will be glad to furnish you the name of the nearest Gill Jobber.

Stocks carried in all the principal cities and towns of Canada by Canadian General Electric Company, Limited

The HART BATTERY

At Lower Prices!

The United States Motorist is now paying more for an American made Battery of equal quality than the Canadian Motorist pays for the HART.

Think what this means to the many Canadian Motorists who are looking for Batteries of good quality and better value—*and think what it means to the dealers who sell them!*

Once HART BATTERIES are sold they stay sold, and the service station or dealer is able to bank the profit.

When once installed in a car they stay on their job through the hot summer days; through the rain and mud of spring and fall seasons, and through the frost and cold of the severe Canadian winter.

The uses of HART BATTERIES also extend to telegraph, wireless, lighting systems and other great industrial enterprises.

Write for our special dealer proposition—it will mean a lot of business for you.

HART STORAGE BATTERY is not merely a Canadian assembly of imported foreign parts. Though it is backed by the thirty years' experience of its parent company in England, it is thoroughly a Canadian made product—from the innermost part to the outer wooden case—all being made by our own factory at St. Johns, P. Q.

HART BATTERY COMPANY LIMITED

SALES OFFICE Drummond Bldg. Montreal
Works at ST. JOHNS, QUE.
WESTERN SALES OFFICE:
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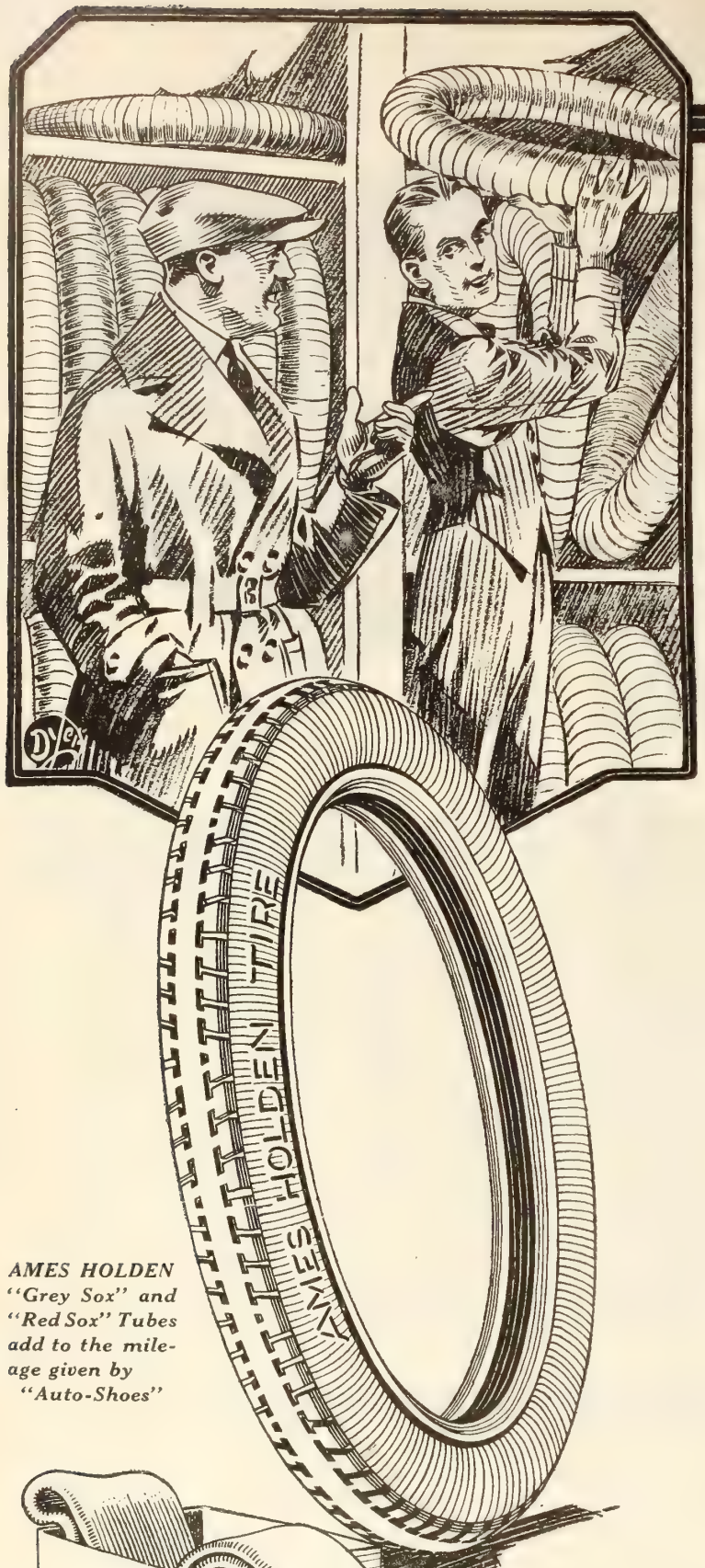

AMES HOLDEN "Grey Sox" and "Red Sox" Tubes add to the mileage given by "Auto-Shoes"

AHM System

Are You Selling Mileage?

Formerly motorists were content to accept any tire with a familiar name, without much thought or care about service.

Now the same men are buying mileage—buying it with the keenest determination to get the last yard of mileage for every cent invested.

Observing dealers quote this fact as the reason for the persistent and growing demand for Ames Holden "Auto-Shoes," which are miles better in performance than ordinary tires.

How many miles better, may be judged from the fact that the bulk of sales are coming in from the districts where road conditions are worst—where a 10,000-mile performance seems unbelievable.

Then the Ames Holden "Auto-Shoe" guarantee appeals to buyers of mileage. It's such absolute protection against defective material or workmanship. It permits adjustments without argument or red tape.

Altogether there are scores of reasons why you should sell Ames Holden "Auto Shoes"—sell mileage. The best one, from your point of view, being the generous policy which takes care of your interests very largely. Let us tell you about it. Write.

AMES HOLDEN "AUTO-SHOES"

Cord and Fabric Tires in all Standard Sizes

AMES HOLDEN McCREADY LIMITED

Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, London, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 TORONTO, SEPTEMBER, 1921 Number 9

Boosting Automotive Equipment Sales

Automotive Equipment can no longer be considered as a side-line. It is the most potential moneymaker on the automobile dealer's list. But it must be pushed. A commission on accessory sales to salesmen would help.

THE BUSINESS of selling automotive equipment is a very profitable one. It does not require a great deal of money to put in a suitable stock and if properly merchandised, the stock turns over quickly. If carried on in connection with an automobile and garage business a successfully conducted accessory business can take care of the entire overhead.

Few dealers realize the possibilities in this essential line of the automotive trade. It is usually considered as a side-line and often neglected entirely.

Why this should be is hard to explain. Perhaps it is because the industry has advanced more rapidly than the dealer. Perhaps it is because the dealer has been so busy selling and servicing the automobile that he has had no time for anything else. Be the cause what it may, the accessory end of the business has not been receiving its due share of attention.

Realizing this fact the Automotive Equipment Association at its annual convention recently decided to adopt a sales promotion scheme calculated to stimulate interest in automotive equipment on the part of everybody connected with it, from the manufacturer down through the jobber and jobbers' salesman, to the dealer.

In the August issue of M. T. I. this scheme was outlined. It embraced the voting of $40,000 for sales promotion work for the first year and the forming of a permanent committee to carry on the work. It will be the committee's business to carry the message to the entire trade in the United States and Canada. Considerable work has been accomplished already. A sales-promotion week was held August 6 to 13, and much good has been derived therefrom all over the country, where it was observed.

Ray W. Sherman, formerly executive editor of the "Motor World," has been appointed Merchandising director.

Under the auspices of the Canadian members of the Automotive Equipment Association, a meeting of automotive equipment salesmen was held at the King Edward Hotel, Toronto, on August 27, at which Ray W. Sherman was the principal speaker. About one hundred salesmen and dealers were present.

In his address, Mr. Sherman laid great stress on pushing sales. He said that no new methods were required; all that was necessary was that the dealer should put the ideas he already has to work and keep them working.

The dealer must approach the customer and not wait for him to make the advance.

Heretofore the accessory salesman has been content to wait until the customer asked for a certain article before he got his selling artillery into action. The dealer must now use that artillery to prepare the ground for a sales advance.

Now, let us, we who are in Canada trying to promote the sale of accessories, look at the question squarely.

There is practically speaking no sales resistance to be overcome, it is simply, in most cases, an overcoming of inertia. Are we really doing all we can? Are we fully awake to the possibilities?

The average motorist is content to drive along with the least possible equipment. If the car moves without too much trouble, he is satisfied. It is the dealer's job to educate him to a keener appreciation of economy and comfort.

Sometimes, too, it will be necessary for the dealer to break the inertia that is paralyzing all effort on his own part.

In every phase of merchandising and at all stages, the dealer if he would succeed, must grapple with this devitalizing and fatal disease, inertia. Its evil effects are seen at all times.

It is responsible for the ill-kept offices, poorly lighted showrooms, and badly arranged merchandise. It prevents the salesman from trying to sell the motorist oil who comes in for gasoline. It keeps the dealer glued to his office chair in a dull season, moping and fretting about business being bad, when he knows he should be out canvassing for sales. Business is often bad because inertia is allowed to direct affairs.

Let us break this thing and go out and do the things we know we should do.

We said a minute ago that the dealer should approach the customer and not wait for him to make the advance. It isn't intended to indicate that the dealer should hail a man in passing his store and ask him if he wants to buy a spark plug. But we do wish to say that when a man comes into your place to have a dented or bent fender straightened and he is not equipped with bumpers, it is reasonable and desirable to try to sell him bumpers. If a man comes to you with a tire that has been badly blown out and on examination you find it is in too bad shape to be repaired effectively, it is your opportunity to sell to that man a new tire.

This may sound to some dealers like a very elementary piece of advice on merchandising accessories and equipment. That is exactly what it is, and it is a pity it is so. If the average dealer would attend to the obvious and even elementary in merchandising it would not be necessary for us to write this. The $40,000 voted by the Automotive Equipment Association could be given to charity and the trade in accessories would be so stupendous in volume there would be scarcely anything to equal it.

A Toronto man who occupies an important position with a large concern bought a car from a local dealer. Having heard a great deal about shock absorbers and how they made riding much smoother this man said to his dealer: "How about shock absorbers for my car? I hear they are a great comfort."

"Well," said the dealer "no need to buy them for this car. She is equipped with the——— springs, the best that money can buy. You'll ride as smooth as in a motor launch, and you won't require to spend money on shock absorbers."

The customer was satisfied at the moment. But very soon he got the desire for those shock absorbers and made up his mind to have them installed. When he purchased them the dealer who sold him the car, even though he sold shock absorbers, did not get the business.

It is difficult to understand from what angle the dealer was arguing when he advised against installing shock absorbers. Perhaps he wanted to save his customer as much expense as possible; or perhaps he wanted to impress on him the superior quality of the car. In either case the dealer was quite wrong, for in the first instance the customer was not only able to afford the equipment, but he desired it as well, and in the second instance, shock absorbers in most cases are a distinct advantage on a car.

That is a true story and is only one of many that we could give. Perhaps it is an extreme example, but it goes to prove that in many cases even the elementary ideas of merchandising are neglected.

There is hardly a garage in the country that does not have at least a dozen motorists visit it every day for oil or gasoline. The average is considerably higher. Now supposing the weather has been wet for some time, making driving dangerous, is it not reasonable to suppose that out of the dozen three could be sold non-skid chains? As a rule, after supplying the customers with gasoline he is allowed to go away without an attempt being made to sell him anything. If two or three of these transient customers could be sold one article each day the increase in the dealer's accessory business would be considerable.

Why not give the mechanic or salesman whose duty it is to attend to the gasoline pump a commission on every accessory sale he makes?

Practically every car that comes to a garage is in need of equipment of some form or another. Why not look it over to find out what it needs and try to sell the article or articles?

THE AUTOMOTIVE equipment business is becoming increasingly important, in fact, it is an industry within an industry. It can be no longer treated as a side line. If the automobile dealers do not arrange their businesses so that automotive equipment can be merchandised in keeping with its growth and the obvious and latent demand they will pass up a glorious opportunity and in so doing will probably pave the way for a specialized automotive equipment merchant.

By the very nature of this business the automobile dealer will always get a share of the sales no matter what develops. He is the obvious and best equipped man to sell accessories, but why just get a share when he can have the whole thing?

Service the Tractor and Keep It Sold

Service Is the Most Important Aspect of Tractor Merchandising. This Is the First of a Series of Articles Covering the Entire Field of Tractor Operation and Service

By L. G. HEIMPEL, B.S.A.

"NO TRACTOR is properly sold until the new owner is pleased with its work and he knows his machine well enough to do intelligently his own trouble-shooting." These words are the convictions of a representative of one of our largest tractor firms who has given tractor merchandizing considerable study.

Any man will be pleased with a tractor as long as it runs well because a tractor running well will eat up work so fast that it is bound to please any farmer. Still two facts are before us.

(1) *Not all farmers owning tractors are really pleased with them.*

(2) *Considering the real merits of the tractor on farms, they ought to be selling faster.*

After analyzing these facts from every possible standpoint we are convinced that the causes of the above facts can be included under

(1) *Lack of service.*

(2) *Lack of education.*

Education, as far as tractor operation is concerned, should be included under service because the service man is the man who must, in the first place, show the new owner the necessity for study on his part, and he must impart to him as much information about the principles of his tractor as he possibly can.

How Some Tractors Are Delivered

Too many tractors are left in farmers' hands with barely enough information to enable the owner to stop and start it and to fill the fuel tanks and radiator. If any instructions are given the new owner, they are of the nature one too often finds in our farm implement instruction books and run something like this, "Set up piece No. 4846A, insert bolt No.001 and pull lever No. 623," a series of instruction without any reason given for any of the actions. Instructions for all the world like the parrot-like, reasonless prattle of the old fashioned drill sergeant on the parade ground. We tell a man not to change gears without pushing down the clutch lever and we stop at that, instead of showing him a cut of the clutch and gear-set and explaining to him that to change gears with the clutch in would probably strip some gears, and that would mean a repair bill which can easily be avoided by being careful. Many of us in our enthusiasm over our machine and in the confidence in it through our own proficiency in handling it, are always running away with the idea that its just as easy for the "green horn"—well it isn't. Every car salesman knows that the abuse a car gets during the first month the average green driver handles it is harder on the car than three times the mileage in an expert's hands. The same is true with a tractor only that the results are liable to be worse for the latter machine.

An automobile motor's average load is hardly ever greater than twenty per cent of its total horsepower. A tractor's load is usually a hundred per cent of its load and too frequently they are overloaded. Put a new engine in a farmer's hands, show him how to stop start and generally handle the machine; he will start to plow and if his conditions are average, he will have hills or at least grades, hardspots and plenty of instances where the new tractor needs all its power. Supposing he has had no instructions about cutting down the fuel at the needle-valve as the engine warms up, the result will be an overheated engine, lack of power, a shut-down and a bewildered farmer who will as likely as not telephone for the service man. Supposing the fan belt stretches as new belts will, and the slippage causes overheating with the above results, would it not be far better to have spent a day or two days going over every detail of that engine with the new operator rather than make trip after trip to him to fix him up?

Each little shut-down such as the above will shake the owner's confidence in the machine and it certainly does hurt the tractor's reputation in that community. It is pathetic to have a service man make a long trip into the country to fix an engine that has no more wrong with it than a dirty spark plug; and yet it is only too true that a great many men are not able to detect a missing cylinder. Why cannot the service man *make* the engine miss and introduce the new owner to the common trouble, also show him how to detect it and repair it?

After nine years of experiences in trouble-shooting of one kind or another we are convinced that the only way to sell a tractor properly is to educate, as thoroughly as possible, the new owner of the machine. Teach him the principles of operation, the relation of the different parts or systems of the engine to one another, the troubles which are likely to occur and their simplicity when understood.

We have seen a good tractor in the middle of a field for two weeks in a busy season because a gasket had given way and water had fouled one cylinder. We have travelled miles to start an engine when all that was necessary was to clean the contact points in a magneto. Every road man has done many miles to cure a missing cylinder caused by the simplest of troubles. Surely the remedy is plain: *there should be more of that service known as Education.*

How Can Service Man Best Teach The New Owner

Almost every tractor firm publishes instruction books which are a very great credit to the firms and to the authors. They contain sufficient information to make a tractor-man of ability out of any one who studies them. The fact is too few owners look at them and only very few really study them. The service man's business is to create an interest in the owner as to the internal operation of the machine, then to show where it is all laid wide open in the instruction book.

With the aid of the book he can take the owner through the nature and function of every part of the machine. He should commence with the different systems of which the tractor is made up as follows.

(1) The motor.
(2) The clutch.
(3) The gear-set.
(4) The rear axle.
(5) The steering mechanism.

Then he can enlarge on these systems, dividing the motor up into its parts.

(1) The fuel system.
(2) The ignition system.
(3) Motor parts their functions.
(4) Lubrication.
(5) Cooling.

So we could go on enumerating the different parts, but they will be covered in a later article and this is sufficient to show how big the subject of making an efficient operator out of a green hand really is. To cover the subject properly the service man should stay with the owner no less than two days and the time should be largely employed beside the machine in explanatory talk with the instruction book always in hand. True it will mean a loss of time to the farmer and may look like a lot of time spent by the service man but both farmer and dealer will know before long that it was a splendid investment.

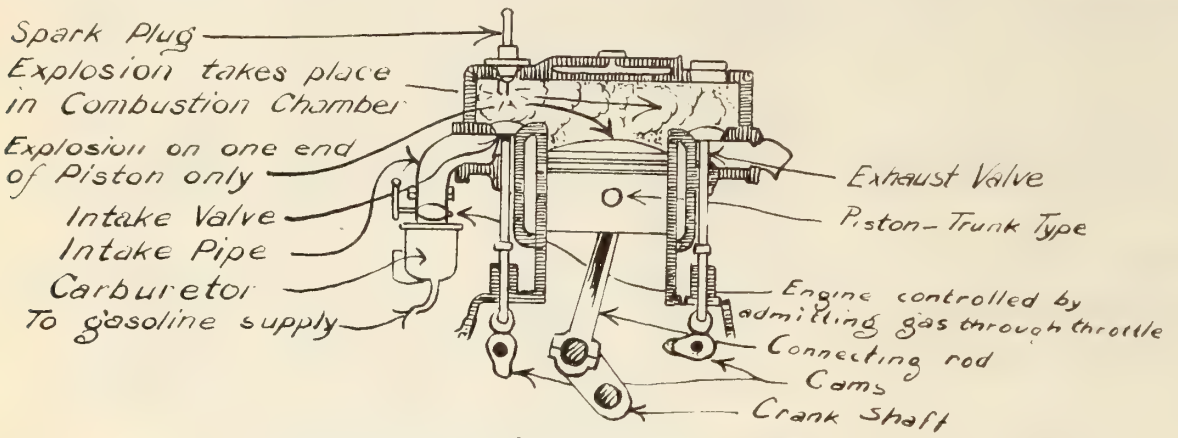

Diagram illustrating the Gasoline Engine, or Internal Combustion Engine.

Teaching the Power Plant or Motor

The kind of motive power we are interested in, in discussing farm tractors, is gas-engine power, or power produced by an internal combustion engine. The term 'internal combustion' can best be explained by comparing the gas engine with the steamer.

The steam engine burns fuel, wood or coal, under a boiler, steam is raised and stored under pressure, This steam is admitted into a cylinder containing a piston, the piston is driven back and forth in the cylinder as the steam is admitted first into one end then into the other. The piston's back and forward motion is changed into rotary motion by the use of a crank and fly-wheel giving us an engine. But the fuel is burned outside of the cylinder. This gives us an external combustion engine.

The gas-engine, however, draws a charge of inflammable gas, made of a mixture of air and gasoline, or kerosene vapor into the cylinder, which is burned right in the cylinder, the expansion of the gases being so fast as to be termed an explosion. This drives the piston out through the cylinder, but, as in the case of the steam engine, the piston is connected to a crank and fly-wheel, so that the reciprocating action of the piston is changed into rotary motion of the crank shaft. The fact that the fuel is burned in the cylinder gives rise to the term "internal combustion engine".

It may be of interest here to note the following advantages of the gas-engine over the steam for farm power purposes.

(1) The gas engine wastes less heat of the fuel burned: it is more efficient.

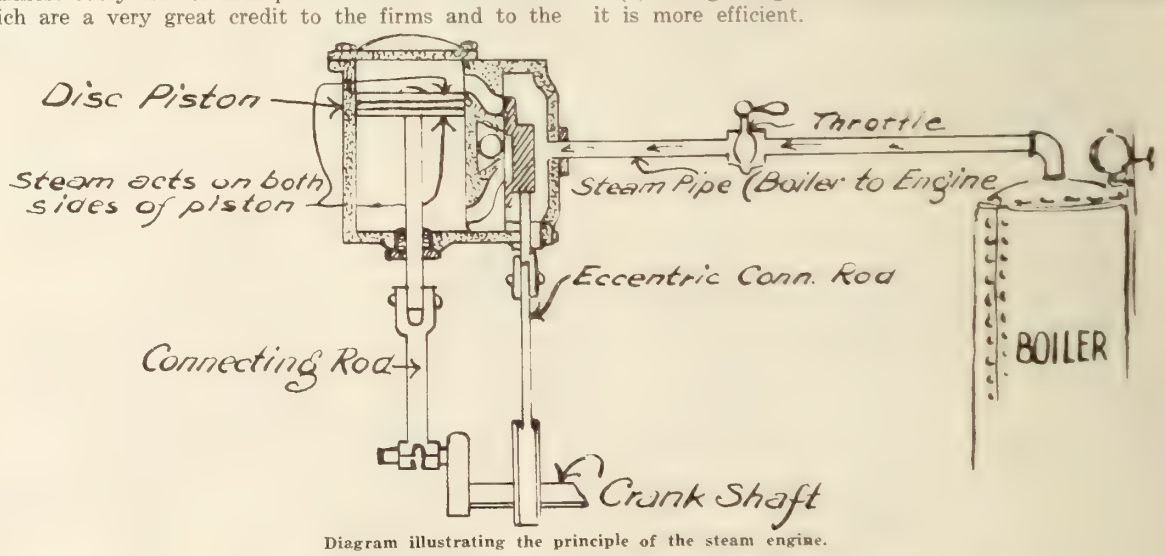

Diagram illustrating the principle of the steam engine.

(2) A steam engine needs an attendant to fire the engine and watch it, a gas engine does not.

(3) There is no danger of fire from a gas-engine if ordinary precautions are taken in handling fuel.

(4) For tractor purposes for farm use, gas engines alone are of sufficiently light weight to be of use.

(5) Fuel and water for a steamer require a man and

(Continued on page 6.)

The Salesman, the Truck, and the Prospect

A Special Type of Salesman Is Required to Sell Trucks Successfully. There Is Only One Type of Truck to Sell—the Best. There Is Only One Type of Prospect—the Man Who Can Use a Truck Profitably. The Whole Must Be Backed By Service

By D. R. COWAN

CERTAINLY, any person interested in motor transportation could not help feeling that the whole truck industry was displayed before him as he wandered in and out through the motor truck section of the Canadian National Exhibition at Toronto. There, in panorama, one could see fine trucks with energetic salesmen earnestly setting forth the many fine points in construction and operation to interested onlookers. In other words, the latest in truck design, truck salesmanship and truck demand were all on display.

The salesmen were the vitalizing dynamos of the exhibit. They were all alike in one respect. All of them were selling the "best trucks." But they differed in other ways, especially in their methods of salesmanship. Some were indolent and allowed the observer to make his own inspection without aid. Others were energetic, but were not the most effective because the prospect was dominated more by the salesman's personality than by the truck. Some sold trucks while others sold transportation. Some were untrained salesmen and they were faced by competitors who were trained.

What are the characteristics of a well-trained salesman?

The salesman must be possessed of, and be thoroughly imbued with the requisites of successful salesmanship—confidence, good health, knowledge, personal appearance, and loyalty.

1. He must have confidence in the organization producing the truck, in the truck itself, and in the executive whom he directly serves in the local organization. In proportion to his lack of confidence, the salesman will also lack the willingness, eagerness and enthusiasm to effectively present the truck to the prospect.

2. Good health is necessary if a man is to have success in any capacity. No salesman can be convincing if he is not feeling well, or if he lacks proper nourishment, exercise, and sleep.

3. A knowledge of every detail about the truck, its operation, and its use must be had so that a prospective customer will not be able to ask questions which cannot be answered intelligently. Furthermore, a wide general knowledge of men and industry will enable the salesman to pick out the points in which a customer may be especially interested and to dwell upon them effectively.

4. The unkempt and slovenly appearance of a salesman will often cause the truck to be viewed unfavorably. A man is judged by his appearance and first impressions are usually permanent.

5. A salesman must be loyal both to himself and to his truck.

An executive officer of the Maxwell Motor Sales Company says that a truck salesman should always have fixed in his mind "Things to do," and "Things not to do."

Things To Do

1. Compile a list of possible uses of trucks.
2. Segregate your list into the various trades, filing same on cards. This will allow for the sending of special sales information to various trades without confliction.
3. Select lines of business that look to be the most in need of trucks and concentrate upon them, learning as much about these lines of business as you can.
4. Send out sales letters and literature at least twice a month.
5. Observe horse equipment wherever seen, with the thought of trying to supplant it with motor equipment.
6. Follow your daily newspapers for hints or suggestions that might produce prospects.
7. While on your salesroom floor, give individual attention to anyone who may enter.
8. Keep in touch with your users at intervals and try to keep them satisfied, because they will probably produce more prospects than any other source.

Things Not To Do.

1. Do not criticize other makes of trucks.
2. Do not have too much to say; give the prospect a chance to figure out some of his own problems and then go over them with him for the purpose of showing him where your truck would prove immensely beneficial to him.
3. Do not impress him with the thought that he is spending money, but rather that he is making an investment essential to his business.
4. Do not misquote your loading capacity in your anxiety to make a sale, as selling for overload may result in serious consequences.
5. Do not sell looks or paint, but sell construction, durability and economy of operation.
6. Do not be too mechanical in your description, but be prepared to answer any mechanical questions that may be put to you.

The Kind of Truck to Sell

Some trucks are better than others, but all of them have both advantages and disadvantages. Many of the owner's criticisms are directly attributable to the salesman who, in his desire to make a sale, makes assertions that are accepted in good faith, but which cannot be fulfilled. Why does a truck salesman say his particular two-ton truck will carry three and four tons? Is it good sales policy to tell a prospective user that he can operate his truck for a ridiculously low figure, or that all the truck needs is a man to steer it? It is only fair to say that the more reputable truck producers have adopted the sounder policy that in the long run "The customer must be pleased." These companies do not sell to-day for to-day's business only, because they expect to be in business many years hence. Their sales policy of service insures increased future business.

Trucks should be sold for their utility. This picture shows three of a fleet of nine "Service" trucks used successfully by stone quarry operators.

The Right Kind of Service

If prospects would ask salesmen what service they had to offer after the truck was bought, it would cause some producers to add something more to their sales policy. It is service after the truck has been sold. Not every producer would need to make this addition because many already have it. At the Canadian National Exhibition, several of the major truck exhibitors were frank in saying that they owed their continued success as much to a faithful follow-up policy of service as to the excellence of their product. One Toronto firm in particular keeps a record of the life and operating cost of every truck it sells, inspects it regularly for the owner, gives advice in improving its operating efficiency, and maintains a splendid repair shop where annually each truck is brought by the owner for a thorough rebuilding. In this manner it is hoped that the life of each truck will be prolonged indefinitely. How different this service is from that of the concern scarcely able to offer extra parts! The value of this service policy in making new sales was amply demonstrated by the fact that at their exhibit at the Canadian National Exhibition, the salesman of this Toronto firm used their service story as their main argument and undoubtedly sold more truck than other exhibitors.

Study the Prospect's Needs.

It is not long since the average truck salesman sold the largest truck his firm built. In lining up a prospect to-day the best concerns sell trucks only after their transportation experts have carefully determined the size which will be the most efficient for the user. This is a step in the right direction and it is only a question of time before more concerns will sell truck service and co-operation instead of just trucks. The truck manufacturer who shows that he has the truck user's interest in mind is the manufacturer who will be doing a prosperous business in time to come.

Replacement Sales

What of the future? Is our talk about selling and service of no avail because there is going to be no business? If the facts are faced squarely there is plenty of ground for reasonable optimism. It is true that except in the fruit, vegetable, and dairy branches of the industry, agriculture will not provide a very large market for trucks. But there is another side to the question. Large manufacturing and contracting concerns discontinued purchasing trucks fifteen months ago. At that time the trucks they owned had seen strenuous service at the close of the war period. Since then their factories have been closed, but they continued to operate their trucks in the process of clearing out their huge surplus stocks of finished goods. The writer knows of several firms who are in this position. One in particular has used its delivery trucks almost as much as in the boom period, and those trucks are now almost ready to be replaced. Yet that firm has not been approached by a single truck salesman during recent months. The need of replacements is likely to cause a revival in truck sales just as it did so strikingly in rubber tire sales. Tire manufacturers are in a much sounder position to-day than they were ten months ago, thanks to renewal business.

Gradually lowering production and operating costs will soon make truck transportation more economical than railway transportation for an increasing number of manufacturers, contractors, and even livestock producers. This is because railway rates have not been reduced, and cannot be reduced very greatly as long as railway wages remain high and the railway companies are faced with the huge expenditures necessary to bring their road bed and equipment up to normal.

Here then are two important reasons why truck salesmen should banish their "blues" and start to canvass the field thoroughly. Business men may ask to be shown, but there are real sales prospects as the Toronto Exhibition has demonstrated. All it requires now is perseverance. Where there is a will, there's a way.

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The Tractor Demonstrations

THE FALL season is with us again, and along with it come the fairs and the demonstrations and plowing matches. After the strenuous spring and anxious summer months, the farmer at this time takes a short breathing spell to visit the fairs to try his skill with the plow in open competition at the great plowing matches, and to see the tractor and other power machines at work. He likes to see and inspect the latest things in equipment, and for that reason, if for no other, the dealer should make it his business to be there.

There will be two big plowing matches and tractor demonstrations in Eastern Canada this year; one at Maizerets, Quebec, on Oct. 11, 12, 13, under the auspices of the recently formed Quebec Plowmen's Association, and the other at Woodstock, Ont., on Oct. 19, 20, 21, under the auspices of the Ontario Plowmen's Association.

A new feature, which is expected to be included in the programme of the Ontario Plowmen's Association, will be a plowing test between tractors and horses. The details of this test have not yet been worked out, but it will probably be carried out with a tractor pulling a two furrow plow and a team of four horses drawing a two-furrow plow, both combinations plowing the same size of land in the same soil.

This should be an educational as well as an interesting test. A great many farmers have been asking the question, "How does the cost of operating with a tractor compare with thec ost of operating with horses?" It is a live question, and a perfectly natural one, and one which has caused considerable controversy. With the idea of arriving at the truth of the matter, so far as it concerns the Ontario farmer, the association proposes to conduct this test.

From the farmers' standpoint, the object of a plowing match is to encourage good plowing. From the manufacturers' standpoint the object of demonstrating at these plowing matches is to educate the farmer to the power farming idea. From the dealers' standpoint the object of being present at these demonstrations is, broadly speaking, two-fold:

To learn the latest about power farming; and

To get new prospects.

The opportunities for education and for meeting with new prospects, which may lead to increased sales, are so great that it is a grave mistake not to take advantage of them.

Concentrate on Tractor Overhauling

THE FUTURE of the tractor industry depends upon the success of the tractors now in use. The success of the tractor dealer depends upon his ability to sell tractors, and to keep them sold. The best way in which a dealer can keep his owners satisfied is to provide an adequate tractor service.

We are not referring to the usual field repairs and adjustments, but to a properly organized system of repair service.

The time has passed, or passing rapidly, when the farmer is willing to or can wait until the dealer sends to the factory for an expert, or for some part. **The successful tractor dealer of the future will be the dealer who can provide a repair service and spare parts at an hour's notice.**

There have been too many cases of work being help up at a critical moment through the tractor breaking down. In most cases delays have been caused through some very trifling matter.

There is no reason why the dealer should neglect his tractors, until they are ready to break down.

Until the man who sells the tractor—or some other man working in conjunction with him—is in a position to service it thoroughly, the industry will make comparatively slow progress.

"Hold tight. You'll go up in a short time." Some good advice to the business world from Racey.

Practically speaking the only complaint against the tractor has been in connection with keeping it in working shape.

Why can't dealers make it their business to inaugurate a system of tractor overhaul this fall and winter? It is said that every tractor should receive a thorough overhauling every two years. Think of the commercial possibilities of overhauling all the tractors in the country.

Think of the tractors in **your** territory which have not been overhauled for two years, and you have a fair idea of the amount of business you can get this fall and winter—business that should not be hard to get. And think also of the possibilities for new sales through tractors kept in good shape all the year round and their owners satisfied and boosting for you.

No tractor dealer can afford to neglect to service the machines he has sold. One neglected tractor may mean the loss of a dozen sales.

Use Manufacturers' Sales Helps

IT HAS BEEN demonstrated very clearly from time to time, and has now practically become an axiom, that the dealer who consistently uses the printed matter and general advertising and sales "helps" which the manufacturer furnishes, is aided very considerably in his sales campaigns. The "helps" bring good business, and, at practically no cost to the dealer, keep his goods prominently before his public.

Of course, in order to accomplish what they were designed for, they must be used.

Not all dealers are convinced of the possibilities in these helps, else there would be no need to draw their attention to them. Judging by the treatment meted out to such material at times, it would seem as though many of the dealers regard it as a nuisance, or at least, of no consequence.

We feel convinced if the dealer would shake off his inertia, would dig out the buried sales matter from its resting place behind the counter or in the cellar and put it into service, there would be an appreciable improvement in his sales.

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Keeping in Touch

KEEPING IN TOUCH with the man who purchased a car, or a tractor, or a farm machine, is one of the best confidence builders known. Not only is it a confidence builder, but it often leads to more business.

By keeping in touch the dealer learns how the machine he sold is performing.

In the course of a week or so after a machine is sold, it is possible that something may go wrong, and if the dealer is on the job a slight adjustment or a word of advice, might turn the scale between a satisfied and a dissatisfied customer.

Then, too, the customer may be able to tip the dealer off to the fact that a certain man is considering purchasing a machine.

It is quite certain if a customer is pleased he will do all he can to throw business in the dealer's way.

Therefore, Mr. Dealer, if you would satisfy your customers and increase your business, make a point of *keeping in touch.*

Valuable Disciplinarians

"I AM GLAD, sincerely, that business these days is not a bed of roses," said the owner of a growing factory recently. "I find that our organization needs the rigors and severity of slow sales as a matter of discipline.

"Three years ago we started on a shoestring—and orders came so quick that we almost got swelled-head. If boom times continued we would have forgotten the real meaning of business and become involved in extravagant speculations of inventory and markets, which would have meant ultimate disaster."

Easy business makes cocky business, and cocky business is not conducive to permanent growth. The leaders in every industry have not grown mushroom-like, but have progressed by sometimes imperceptible degrees into a place where war and panic and temporary depressions cannot shake their stability.

Slow sales and hard work are valuable disciplinarians—they make each business justify its existence. —Printers' Ink.

Service the Tractor and Keep It Sold

(Continued from page 4.)

tender to supply them. Gas engine fuel is concentrated and is easily carried.

The internal combustion engine is peculiarly adapted for farm use and since its introduction and use in the stationary engine, farm car and tractor it has had a tremendous influence in assisting the farmer in his daily work, it might almost be said to have revolutionized Agriculture.

By referring to figures I and II the differences in construction and operation of the piston between a steam and gas engine will be made clear.

The steam engine cylinder is closed at both ends, the piston is of the disc type and steam is admitted alternately into the two ends of the cylinder. The piston is driven back and forward, thus giving a power impulse or push every half-revolution of the crank.

The gas engine, on the other hand, has a cylinder which is open at one end and the piston being of the trunk type is also open at one end so that power is delivered only from one end of the cylinder. A steam-engine therefore is said to be double-acting and a gas-engine is known as a single-acting engine. To bring the piston back in a gas-engine, once the explosion has driven it out, requires a heavy fly-wheel, the momentum of which is sufficient to carry the piston back and forward in the cylinder from one power stroke to the next. That is why single cylinder gas engines have such heavy fly-wheels.

The next article will deal with the four-cycle principle of the internal combustion engine.

An interesting View of Lake Ontario from the Exhibition Grounds.

Big Display of Farm Machinery at C. N. E.

"DON'T THE Canadian farmers use horses at all on their farms?"

The man who asked this question was studying the wonderful power farming exhibit at the Canadian National Exhibition. The question was directed at nobody in particular, and was more in the nature of an involuntary exclamation than a question. It was the speaker's way of showing his surprise and appreciation of the tremendous strides made by the manufacturers of farm power machinery.

After a journey down "machinery row," one is not surprised at such a question being asked by a city man. It would almost seem as though "Dobbin's" days are numbered. There was power machinery on exhibition to take care of practically every kind of job on a farm, from the smallest "chore" to reaping and threshing.

Ten years ago few would have dreamed that power on the farm would be used so extensively. Ten years from now there will perhaps be developments beyond the dreams of the most optimistic power-farming enthusiast among us.

This year has not been exactly one of smooth sailing for the average power farming dealer. Sales have not been easy to get, and have been for the most part secured by the fighters. There will always be business for the man who is willing to dig for it. And those who dug deep and kept at it have been rewarded by a generous measure of success.

There was no pessimism at the "Ex." Manufacturer, distributor and dealer alike were talking big business for the fall and for 1922.

Trend of Prices Lower

An encouraging feature is the tendency on the part of the manufacturers to meet the farmers' demand for lower prices. In fact, many lines shown at the exhibition are now being offered to the farmer at a figure lower than what he paid in 1915. There will without doubt be more reductions which will tend to start the farmer buying. The farmer, after all, is the leader in every buying campaign in this agricultural country, and any move which is intended to meet his reasonable demands is a step in the right direction.

For the first two or three days of the exhibition business was rather slow, but towards the end of the first week it got into a good healthy stride. Farmers were to be seen everywhere. They crowded the tents at times and fired interested and eager questions at the representatives in charge. The farmer is mightily interested in power farming. He may not always be in the field for a tractor or an individual thresher, but he loves to watch them in operation just the same.

Many Sales and Long Prospect Lists

While the show was primarily put on for educational purposes many sales were made and long lists of live prospects were booked. One exhibitor had to sell the only hay bailer he had on the grounds, so urgent was the farmer's need who bought it. Judging by the prospect lists of the various exhibitors, this fall should see a very healthy business in the sale of tractors.

The tractor display was a particularly impressive one, and, in the writer's opinion, larger and better than that of the previous year. There were very few new developments in design to be noted. However, there were some new additions to the Canadian tractor trade. The English "Austen," the Italian "Fiat," and the American "Nelson" were all shown for the first time. The Austen and the Fiat both sell to the farmer at approximately $2,000. A Canadian price has not yet been determined for the Nelson, which has a four wheel drive.

There were gas tractors, steam tractors, three-wheel tractors, four wheel tractors, track-layers, and small garden tractors, all different in design and each with its host of advocates. All the steam tractors on exhibition were for use in road making. There was on view a large variety of road-making machinery and stone crushers.

Dealers Interested in Road Machinery

It is noteworthy the number of dealers who are now selling this kind of machinery. It fits in so well with a regular power farming business, and on account of the ambitious "good roads" programmes of the various provinces, should be a very profitable line. The ordinary farm tractor is being used extensively in some districts for road making, so the dealer who sells the farmer his tractor for plowing, etc., should broaden his horizon to take in the town council, board of trade, or highways commission, interested in building good roads.

Machinery for orchard cultivation was well represented. It comprised, in addition to the regular small farm tractor and cultivating machinery, the small hand or garden tractor, extension discs, spraying outfits, pruning instruments, etc. A comparatively new line to the Canadian market was the Hardie power sprayers manufactured by the Hardie Manufacturing Co., Hudson, Mich. This line is made in many styles and sizes to fit varying conditions. The company has a Canadian branch at Petrolia, Ont., and is gradually establishing dealers all over the fruit growing districts.

Farmer Interested in Electric Plants

The farm electric plant exhibits were attractively arranged and drew their share of the crowds. The farmer is vitally interested in electricity for his farm and home and kept the representatives of the various lighting plant exhibits busy answering questions about cost of installation and maintenance, capacity, etc.

Dairy equipment was also well represened. All the well-known firms showed a full line, including gas engines, cream separators, and milking machines. Some of the lesser known separator and milking machines were also displayed. Practically all of this equipment was shown operated by an engine and line of shafting.

The regular implements, such as plows, harrows, drills, potato diggers, manure spreaders, bailers, etc., were prominently and effectively displayed. So were the wagons, barn and stable equipment, and fencing. The bright red colors of the wagons and other horse-drawn vehicles gave an exhilarating effect to the whole scheme.

A Splendid Show

Altogether it was a splendid show. It was easily the most animated and peppy display of all the manufacturers. It attracted huge crowds for the full time of the exhibition. The bulk of the visitors were farmers and dealers. The dealer attendance was good, especially during the second week. The fact that there was such a large farmer attendance, after deducting a certain percentage of the merely curious, clearly shows that the Canadian farmer as a whole is seriously considering ways and means of reducing his production costs. The dealer can look with confidence to a good fall and spring business. The farmer is not bankrupt, and in spite of certain propaganda calculated to keep the farmer from buying, he will again be in the market for those machines which he has learned tend to keep his production costs as low as possible.

Automobiles, Trucks and Equipment Make Brave Showing at Toronto Ex.

THE MOTOR SHOW held in connection with the Canadian National Exhibition at Toronto is now recognized as an annual event. From very small beginnings it has grown to be the biggest show of its kind in Canada. This year's show was larger and more comprehensive than ever. Everything in connection with the automotive industry was displayed in minute detail. Great pains were taken by the exhibition authorities to meet the needs of so great an industry. And the result was a show unparalleled in the history of the exhibition for beauty, variety, and interest.

The Motor show was divided into three parts; automobiles, trucks, and accessories. The passenger cars again occupied the Transportation Building. Forty-seven makes were exhibited. They were arranged around the four walls and in two hollow squares in the centre of the hall. The trucks were located in tents to the west of the Transportation Building, and the accessories in the twin Demobilization buildings to the north of the tented truck to Canadian and United States cities.

It is a pity that the trucks and accessories were not better housed. They were stuck away in a corner of the grounds away from the route of the great crowds. I venture to say thousands visited the exhibition and went away without even being aware that there was a display of trucks and accessories. However, Mr. Robert Miller, first vice-president of the association, announced at the luncheon on Automotive Industries Day that "Next year the automotive industry will no doubt have all the space which the whole army of dealers in Canada could ask."

Automotive Day

Monday, August 29, was Automotive Day at the Exhibition. Auto Day was observed all over the big Fair. In front of the Grand Stand the select of America's speedsters contended for the coveted prizes. In the building and about the grounds, where automotive products were displayed, the crowds thronged.

At the Directors' Luncheon at noon the principal speakers were F. W. Fenn, of New York, Secretary of the National Motor Truck Committee of the National Chamber of Commerce of the United States, and Hon. F. C. Biggs, Minister of Highways for Ontario.

Mr. Fenn in his address emphasized the growing importance of the motor truck in modern transportation. He substantiated all his arguments in favor of the truck system of carrying, by statistics of cost and by description of the present performances of auto trucks at various points in the United States. He pointed out that one-third of the autos in the U. S. were owned by farmers. Five billions of passengers were carried in autos last year in the United States, which was a greater increase over the preious year than that carried by the railroads. Twelve million tons of freight were carried by motor-driven vehicles last year. The economic value of motor car traffic had made compulsory the improved highway system.

Mr. Fenn's statements regarding the advantage of the truck over steam railways for short hauls were especially interesting. Not the least advantage was the release of thousands of freightcars for long hauls by the railways, and it was these long hauls which were most profitable for the steam roads. The speaker spoke of the invasion of the motor buses into Canadian and United States cities. He said that street car companies and operating commissions which had previously frowned on the bus as a means of city transportation were now considering the bus as a means of extending their transportation systems into districts not reached by the car tracks. The buses thus became the feeders of the car lines. The advantages of the motor bus he summed up as follows: Greater mobility, absence of car tracks, ability to extend routes on short notice, confinement of delays to one vehicle instead of the whole system, possibility of a more intensive service, services in residential districts where street car lines are not desirable.

Mr. Fenn also emphasized the importance of improved highways and declared that every dollar spent in improving roads was a pledge of honor to the future commercial greatness and security of the country.

The Hon. F. C. Biggs in discussing the Ontario Government's roads policy said it was only within the past three or four years that Ontario had a progressive roads policy. The pioneer work, he said, had been done by the County Councils aided by subsidies from the Provincial Government. The Provincial highway system was going ahead every day, and he believed with a few years of careful work and careful management the Province would have a system which would please the people. The Department of Highways has adopted the policy of building the roads, not from the top down, but from the bottom up.

Tendencies In 1922 Models

The tendency in motor cars, as seen at the exhibition, seemed to be toward lighter, smaller models. Some new models were shown and three European makes which have recently invaded Canada made their first appearance. The European cars were the "Austen" and "Vauxhall", both English cars, and the "Fiat", an Italian product. Another entirely new car was the Durant "4".

The 1922 models on the whole look better, and perform better than those of 1921. The new McLaughlin "4" attracted considerable attention as did also the new and lighter Oldsmobile "8".

Fancy color jobs were more in evidence than in previous years.

It was gratifying to note the downward trend of prices. In spite of the fact that 1922 prices are lower, the standard of the cars and their equipment is steadily tending upwards.

Trucks and Accessories

In spite of the fact that truck sales, generally speaking, have been hard to make this year, due to no fault of the truck as a utility but to the economic situation, the motor truck is rapidly becoming the transportation medium on the farm and for industrial enterprises.

The display at the exhibition, in the "tented ground," was nothing short of wonderful. There were trucks shown there for every conceivable purpose. Economy, efficiency and dispatch was the key-note of the display. The truck has entered into every field of industry to-day, and its twin brother the motor bus bids fair to become a deadly rival of the street car.

Sixty-eight varieties of exhibits, and most of these including a wide diversity of products, formed the largest display of automotive equipment ever seen in Canada. The twin Demobilization buildings were crammed to the doors with everything that goes to make motoring comfortable and economical. It abounded in interest also for the dealer and garageman who is anxious to reduce operation costs. Garage and service station equipment of every description was displayed and demonstrated. Of late the manufacturing of automotive equipment has leaped ahead in Canada, and evidence of that is to be found in the fact that there are now about 150 such industries in the Dominion. The majority of the products shown in this year's display are made in Canadian factories by Canadian workmen.

A Busy Corner at the Canadian National Exhibition.

EXPECT INVASION OF GERMAN MOTOR CARS

TO-DAY Germany has more than 100 automobile factories employing 50,000 skilled workmen, says George Witte in a dispatch from Berlin, Germany to the Toronto Star. All are turning out high grade cars, of which 75 per cent are solely for export purposes. There is no market in Europe or South America to-day for cheap cars. The German makers argue that people who can afford to run cars with gasoline at 50 cents a gallon want something showy for their money.

In Magdeburg, the centre of the automobile industry the writer found the factories with enough orders on hand to keep them running for eighteen months and give them a financial basis for extensions on a large scale. Owing to the cheapness of labor, steel, iron and other material, the factories are able to offer for sale handsome cars with good engines at from one-third to one-half the standard American prices. As a result Germany has taken the lead in the Swiss automobile market away from the United States. Last year Germany exported to Switzerland automobiles valued at about 18,000,000 Swiss francs (approximately $3,600,000), while the United States exported to the same country only about 16,000,000 francs ($3,300,000) worth of motor cars. Altogether Germany exported 20,000 automobiles of various kinds and 40,000 cycles in 1920 while in the last year before the war she exported 6,400 cars and 2,700 motor cycles.

Even France and England buy a large percentage of fashionable cars in Germany because of the comparative cheapness of even the best automobiles. The manufacturers expect to get large contracts from the soviet government as soon as affairs in Russia are normal. In the automobile industry as in other lines of production Germany has her attention fixed on South America. In the last six months she has for the first time, exported more cars to that market than has France.

Most of the employes in the car-making industry work on the piece basis and are able to earn enough to make a living. On the whole, the men are contented, especially as there is a promise of work for a long time to come.

MAKE GASOLINE FROM WEEDS

A NEW advance has been made in the production of synthetic gasoline for fuel purposes, according to Prof. Mailhe of the Science Department of the University of Toulouse, France, who has reported to the French Academy of Science a process for the extraction of gasoline combinations from ordinary plants. The new fluid closely resembles Borneo petrol, which in the early days of the war, provided the French government with the bases for high explosives, as it contains a large percentage of both benzine and toluene.

Not only can the new petrol be mixed with ordinary alcohol, thereby providing a possible motor fuel, but the cost of production, inasmuch as thousands of common weeds can be used in making it, is very low. Moreover, in the process of manufacture of this gasoline an inflammable gas is given off which was said to have produced 20,000 heat calories and which, if captured, would alone pay for the installation of large plants.

CASE TRACTOR MAKES GOOD AT POLISH TRACTOR TRIALS

ON Saturday, June 14th, 1921, the Posen Chamber of Agriculture held a tractor and motor plow trial at Siekierki, Poland, on the fields of the "Wiekkie-Sukierke" seed farms, property of the "Akt. Ges. Granum". The farmers in that section of Poland formerly knew nothing about gasoline and kerosene engines, nor so-called motor-plows, much less tractors. During the last few years motor-plows of foreign manufacture have been used here and there throughout the territory around Siekierki, but the farmers had no idea whatsoever concerning the operation of the tractor. The appearance of the tractors at the Posen Fair aroused a great deal of interest in agricultural circles, and there was much favorable comment. The tractors had been seen on exhibition before, but this occasion was the first opportunity that the inhabitants of this section had ever had to see them in actual operation.

The announcement of the demonstration called forth much interest in the farming communities. A special train, chartered for the occasion, carried some 200 people to the grounds, many others coming in vehicles of every description. Among those present were the farmers from the immediate neighborhood, students from the Posen University, inhabitants from more distant localities, and even people from Warsaw, coming a distance of about 175 miles.

The machines that took part in the demonstration were: Fiat-Excelsior and Stock, both motor-plow outfits; and the tractors Case, Mocarz, Hansa Lloyd, Fiat, Universal Saunderson and Austin.

Prior to the demonstration a tract of land was allotted to each machine and a special committee then examined all the technical details and observed closely the work of each tractor during the demonstration.

The machines entered did the work allotted to them with various degrees of success.

Commenting on the work of the tractors at the demonstration the Polish newspaper Dziennik Poznanski, has this to say:

"Of all the trzctors, the best work was executed by the American tractor "Case" of 27 H.P. which pulled a four-bottom plow. The machine, which is of convenient size, has four wheels, of which the two in front are smaller than those in the rear. The transmission system on this tractor moves with great facility while working in the soil and it is of advantage that it can be run as well on gasoline.

WHITNEY TRACTOR IN CANADA

ONE of the latest tractors to invade Canada is the Whitney, a one-man, two-plow, four-wheel tractor with an S. A. E. rating of 9:18, manufactured by the Post-Whitney Tractor Co.

The Post Whitney Co. is a consolidation of The Post Tractor Co., of Cleveland, The Whitney Tractor Co., of Upper Sandusky, and The Chief Motor Co., of Port Huron, Mich. They have perfected production and distribution plans calling for the manufacture and sale for 30,000 Whitney tractors within the next 16 months.

The officers of the company are: A. B. Whitney, president and treasurer; Harry S. Erd, vice president and general manager; Ralph Blue, secretary. Maurice F. McCarthy has charge of production, and C.E. Grove is manager of distribution, of which includes sales, service and advertising.

The Post-Whitney Co. will concentrate its efforts upon the Whitney tractor. The Post plant at Cleveland will be used to build transmissions; the chief Motor plant at Port Huron will be devoted exclusively to the manufacture of motors for the Whitney tractor. The other parts and general assembly will be done at the Whitney plant at Upper Sandusky.

Some refinements have been made in the Whitney tractor which has a five years' record for reliable performance in the field.

The Post-Whitney Co. realizes that the price of tractors must come down to the price level that the farmer gets for his products. By concentrating all its resources and its huge production facilities upon the production of a single model the company will be able to materially reduce the price of the Whitney tractor which has heretofore sold in the States at $1,175. The reduced price will be announced later.

THE SAMSON TRACTOR DEMONSTRATION

A demonstration of the Samson tractor was held on the farm of Otto Damn, near Ayton, Ont., recently. The demonstration was conducted by J. Kalte, manager of the Hanover Iron Works. The field in which the tractor was set to work was covered with a half-grown crop of sweet clover about 18 inches high, in full bloom. The soil was heavy and dry, but the tractor did the work with ease and seemed to have ample reserve of power, according to the "Hanover Post".

A large number of farmers witnessed the demonstration and were much impressed with the Samson's performance.

11,280 LBS. LUMBER ON THIS 3¼-INCH END, BEARING SKEIN, CHATHAM INTERNATIONAL WAGON
PART OF AXLE CUT OUT. LOAD IS SUPPORTED BY GIANT END BEARING SKEIN AT A POINT NEAR THE WHEEL HUB. HELD TO POSITION BY A FLAT STEEL TRUSS ROD

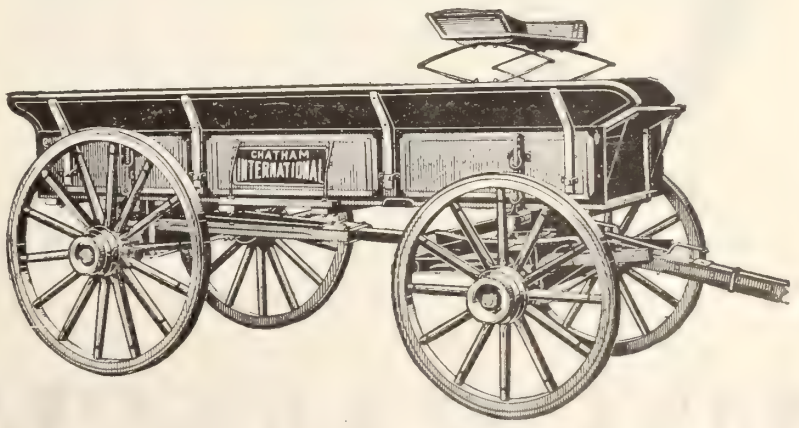
Do you know of any other wagon that will do this? Let this feature help you sell. In making this test, the center of the rear axle was almost completely cut away. The wagon, loaded with 11,280 pounds of lumber, was driven over roughest streets and crossings.

The Profitable Wagon for the Dealer to Sell is Such a Well-Built Wagon as the CHATHAM INTERNATIONAL

THESE are Chatham International selling points: All wood stock used is seasoned in open sheds for two years. It is then placed in a dry kiln which reduces the moisture content to the minimum. The wagon parts made from this stock are oiled and stored for six months before being assembled into wagons. Thorough seasoning means freedom from shrinkage.

The axle, hounds, and sandboards of the front gear are securely clipped—not bolted. The long circle iron gives ample support to the bolster. The unusual length of the sandboard plate and the liberal ironing of other parts are distinctive features. Straight grained oak and clear, tough maple generously reinforced with iron give Chatham International gears rugged strength.

Good construction and trusted reputation make Chatham International wagons readily salable to the Canadian trade. Go after more sales and let us help you. Write the branch house for assistance.



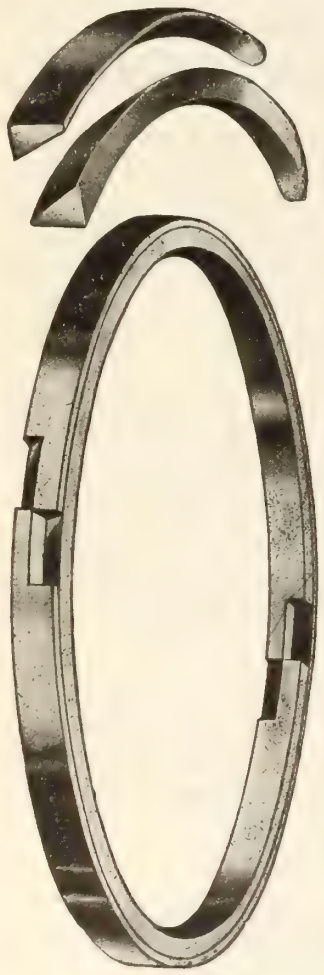
INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD.
HAMILTON CANADA

Eastern Branches:—Hamilton, London, Ottawa, Ont.; Montreal, Quebec, Que.; St. John, N.B.

It Expands Both Ways

ExcellencE 2-Piece Piston Ring

keeps spark plugs clean because it expands both ways and fits tight against the cylinder walls. This causes a **perfect seal** in the firing chamber.



Your customers are looking for a piston ring like this. **The demand is already there.** Stock up with a supply of service and get your share service and get yourur share of the profits.

There are scores of motorists who will thank you for introducing them to Excellent Piston Rings. Immediately they examine one they see why it fits so snug; why there can be no loss of compression; no leakage of oil or gas.

With these facts so apparent you don't have to "push" Excellent Rings. They sell themselves. Why not order a few and see for yourself.

LAMONTAGNE LIMITED

Wholesale Dealers in Automotive Equipment

Quebec, MONTREAL, Winnipeg

EXCELLENCE
2-PIECE PISTON RING

The Service That Builds Big Business

By J. KEMP GOODLOE in *Motor Age*

THE word "service" is variously construed. Some customers think that it definitely embraces all repairs, tow-in charges, adjustments, deliveries, washing and polishing of their cars for an indefinite period after delivery. With others, it covers the many vague promises made by salesmen, who in their eagerness to "close" a sale are inclined to gloss over to the buyer just what rights and privileges he is entitled to after delivery.

Perhaps the greatest trouble the service manager has to combat is this wide spread and erroneous idea of the meaning of "service." This conviction that a car, once bought, should, for a long while, at least, cost the purchaser nothing, is not what this word should convey. All reputable automobile manufacturers agree, for a certain length of time, to make good any imperfections in a car but the labor of installing new parts (replacing by the factory) must rightly be paid for by the customer. If the buyer will only bear in mind that an automobile factory manufactures parts and not human labor, he will realize the justice of this.

My interpretation of "service" is based on four principles: first, proper design and workmanship in the car; second, an efficient and loyal organization, with adequate facilities to do any work in the proper manner, at a commensurate charge; third, a service station whose personnel is fully aware of the importance of making the owner a satisfied customer; fourth, the spirit of co-operation and loyalty on the part of the purchaser.

Service Based on Four Principles

If the foregoing principles are carried out, the difficult and sometimes unpleasant problems with which a service manager is confronted are greatly modified and the head of the service department will enjoy the confidence and friendship of the car owner, who, after all, is a salesman for the organization, though not on the pay roll.

The average motorist knows very little regarding the mechanism of his car, and it is not only the duty of the sales organization but of the service department to explain, objectively, the operation and adjustment of the car purchased. This is not a long and tedious affair. An explanation couched in plain, simple English stripped of technicalities, can be made while showing the parts in their relation to each other.

By an interested and friendly attitude and by meeting the owner, if possible, the service manager, or his floor service superintendent, can create a good impression and pave the way for possibly more than is called for on the order. Indifference and too much "red tape" when the owner brings his car into the service station tends to put him on the defensive and in an argumentative mood as to whether his car should have developed this or that trouble.

Method of Gaining Customer's Confidence

Of course, if the owner comes to the service station with a just complaint, the matter of adjustment is plain. The owner who feels that he is welcome and that the organization is anxious to make good any just complaint, will unhesitatingly endorse his car and the company from which he purchased it, and he will go out of his way, not only to sell motor cars, but service.

As a majority of car owners, especially those who are driving or having chauffeurs drive their first cars, are not familiar with items charged them or terms used on invoices for parts and installation, a method used in this station for simplifying and explaining such charges is herewith outlined.

I send to the stockroom and have brought to my office duplicates of such parts as have been installed, and explain to the buyer just how such parts are replaced and the time it takes to do the work. I also take the owners through the shop, where work similar to theirs is in progress. This gives the customer a working idea of things and tends to convince him that the charges are legitimate.

I may add here that the shop is always kept in condition of neatness and order, and the view obtained by the customer of a shop so kept reassures him as to conditions that affect his car while in for repairs.

Right here I want to emphasize a point. The service department cannot be too careful in the matter of protecting the owner's car while in the shop for repairs. All parts must be kept off of running boards and put into suitable receptacles. Fenders and seats must be covered when cars arrive in the shop. Mechanics are prone to lay tools, parts etc., on the running boards, and even in the car, and as such parts are generally in a very oily and dirty condition, any improvement over old and careless shop methods marks a step in the right direction.

Service and Sales Departments Interdependent

The service and sales organization are absolutely interdependent and mutual consideration should be shown each to the other.

The service manager is always glad to handle any repairs or adjustments which may be termed emergency service, but as the day's work is laid out approximately 24 hours ahead, any rush or extra work which is sometimes promised by the sales department should be arranged for with the service manager before any cars are sent to the station or promise of work given the owner.

In order to keep faith with the sales department, the service station manager should bear in mind that any cars which are to be delivered must be out of the shop and passed by the tester and delivered at the time promised to the sales department. Delay in delivery results in the loss of confidence on the part of the purchaser at the beginning of his relation with the organization, and in some cases causes cancellation of the order and consequent loss of time and effort on the part of all concerned in the sale.

Many women drive cars, and this fact presents another angle of the service to be rendered. A service station should have an attractive restroom for ladies' use, and feminine touches in it add greatly to its appearance and comfort. Floor service must not only be prompt and courteous, but the floor service man should have a clean duster coat to slip on at a moment's notice if he is to test a car. All cars should be wiped before delivery, running boards and steering wheel cleaned, seats brushed and wiped.

The entire organization, from the shop to the floor service, should recognize the importance of courtesy, gentlemanly bearing and willingness to serve in any capacity whenever the service station is visited by ladies.

The men who resolve to succeed make themselves recognized by the heads of the organization and gain the respect and friendship of the car owner. They add to the reputation of the service station and make permanent customers of the people with whom they come in contact. Upon such a foundation they build a lasting and successful business for the house and themselves.

A country storekeeper was standing in front of his place when a man came along leading a couple of old and weary-looking nags.

"Want a hoss?" he inquired.

"Guess not."

"I'll trade you one for goods," said the stranger. "I'll take in out in terbaccer, in fact."

"Might make a dicker along those lines," said the storekeeper, "provided we kin agree on a basis."

"What's your basis?"

"Well, I'll trade you plug for plug."
—Boston Transcript.

Big Future for Power Farming is Assured

By J. B. BARTHOLOMEW

IT HAS been declared often that you can't make as good a seed bed with tractors as with horses as it is claimed that tractors pack the ground more than horses and flatten it out and make it hard.

If there is any merit in these objections it is because an attempt has been made to farm with the tractor in the same way that farming is done with horses.

The advantages of the tractor are more than apparent when farming is done with the tractor, the tractor way. It certainly would not be proper to go on to the soil, either with horses or tractors, when conditions are unfavorable.

Since reading the above lines, a trip of several hundred miles has been made through Illinois territory to ascertain, if possible, what merit they possess. Not a single field has been found that shows signs of tractor work, upon which fields tractors have been used. At first some fields were discovered that showed streaks which it was thought were made by the tractor wheel, but upon investigation it was found the land was worked with horses, improperly tilled, and the streaks referred to were old corn rows. One particular field in which two tractors were used—one being a rather large and heavy one—was examined but absolutely no trace of wheel marks could be discovered.

Another field was examined where the work was done by a tractor in accordance with the tractor way. The oak crop is far in advance of other crops in the same neighborhood, done at about the same time with horses, and bids fair to yield from ten to fifteen bushels more per acre, and no sign of tractor wheel packing of the ground could be discovered.

On June 15, 1921, a field in Ford County Illinois, of very level, black land, where oats were put in this Spring by a tractor weighing 20,000 lbs was examined. The field was gone over twice; not a sign of wheel marks could be observed in the field, and for fifty to sixty feet on each end, where the tractor double turned and worked the soil up much more than in the rest of the field, the oat crop is from six to eight inches higher than it is at any other point in the field, showing every sign of increased yield. Some oat heads were plucked from this part of the field that had ninety-six berries. No such heads could be found elsewhere in the field. The farmer's name is William Quick, Piper City, Ill.

As further evidence bearing on these questions, a large number of tractor owners were interviewed and not a single one objected to the tractor for such reasons, and not a single one was found who did not use his tractor for spring work.

A good deal has been said and printed to the effect that the purchase and use of tractors has killed the horse market so that farmers with too many horses can not get rid of them and must maintain the horses just the same.

The objections classified under this head are all horse questions while they seem to admit that the tractor is the cause of the difficulty.

"The progress of the World cannot be stopped and the history of the United States does not disclose a single instance where a new industry has been stopped without putting something in its place. The people of the United States do not turn back-wards. All the objections that were made to the first railroad project, the spinning machine, the roller flouring mill, the telegraph and the telephone, the steam thresher, the automobile, etc. have long since been forgotten. They were unable to turn back the 20th Century Limited, or any of these modern and very useful machines of progress.

Dark Future for the Horse Breeders

The farmer will not go back to the horse, nor will he go back to the oxen. The horse gradually took the place of the oxen because he was faster and had a greater range of capacity.

Are the farmers going on, in view of this situation, raising additional horses, when the market has already been killed and they can't get rid of them? Or, will they limit their operation in the production of horses to a reasonable amount that will meet their horse requirements, bearing in mind all the time that a good horse is very expensive to raise and maintain.

Of course, it is easy to farm with horses but the American farmer is the best mechanic in the world and it is not necessary to have experts to run tractors any more than it is necessary to have an expert to run an automobile. Every farm child has been brought up in an environment which brings him in close contact with modern machinery, as it is employed on the farm. He plays about it when he is idle and his interest in it when it is in operation is very great. Many times before he is large enough to operate such machinery he knows and understands its mode and method of operation.

Is he the natural born mechanic we hear about? Of course he is not a natural born mechanic—his environment has simply brought him in contact with machinery at an early stage in life when his mind was in a receptive mood to study and understand it.

The farmers of the United States have very greatly improved their condition as a result of their own efforts in planning out and making machinery to meet their own requirements. Most of the great inventors trace back to their early experience as farm boys the time when they received their first vision, the result of which was a great invention.

Big Future for Power Farming

While it is admitted that the horseless farm may be the ideal to look forward to, as yet it has only been realized in a limited number of cases. The basic idea of the tractor is to reduce the maintenance of horses to the minimum because of the enormous expense incident to their production, up-keep and maintenance.

There are a great many who do not know how to care for horses properly. They do not know how to drive and handle them correctly. They seem to have no conception of the peculiar disposition of different horses. They sometimes fight and scold them when they should be gently treated, and they are many times misused, abused, disabled, and sometimes destroyed at the hands of incompetent horsemen. You cannot fix a horse with a monkey wrench.

It does not require any more effort or study to become an expert tractor operator than it does an expert or competent horseman.

They farm intensely in some parts of Europe, and they do it with the spade, shovel and hoe.

The area that they cover are small per man-power and man-power in many parts of Europe is much cheaper than in the United States. It is one thing to make a small area by intensified and hand cultivation, and produce phenomenal yields, but the World is fed by the food that is produced by the American farmer, who farms extensively and mechanically, and it is by such methods that the American farmers have so strongly intrenched themselves in their position, while the farmers of the other countries operating on the other plan have just barely got along.

GASOLINE REDUCED TWO CENTS A GALLON

THE Imperial Oil Company recently announced reductions in prices of gasoline and refined oil, or Kerosene, over the entire country. The cut in gasoline prices in Ontario, Quebec, Alberta and British Columbia is two cents per gallon, making a reduction of 11 cents per gallon since January. In the remainder of the country the present cut amounts to one cent per gallon. A general reduction of one cent per gallon in the price of refined oil has also become effective in every province except Alberta where the price is down two cents per gallon.

It's a pleasure to sell Columbia Dry Batteries

WHETHER for bell ringing or engine ignition, it's a pleasure to pass out to the customer the exact Columbia Dry Battery his needs require.

For every Columbia sale helps you build more goodwill for your store.

Think of the different jobs Columbia Dry Batteries do!

—ring doorbells
—buzz buzzers
—ignite gas engines
—furnish ignition for Fords when starting
—provide ignition and lighting for motor boats
—light tents and outbuildings
—fire blasts
—run toys
—make telephones talk up.

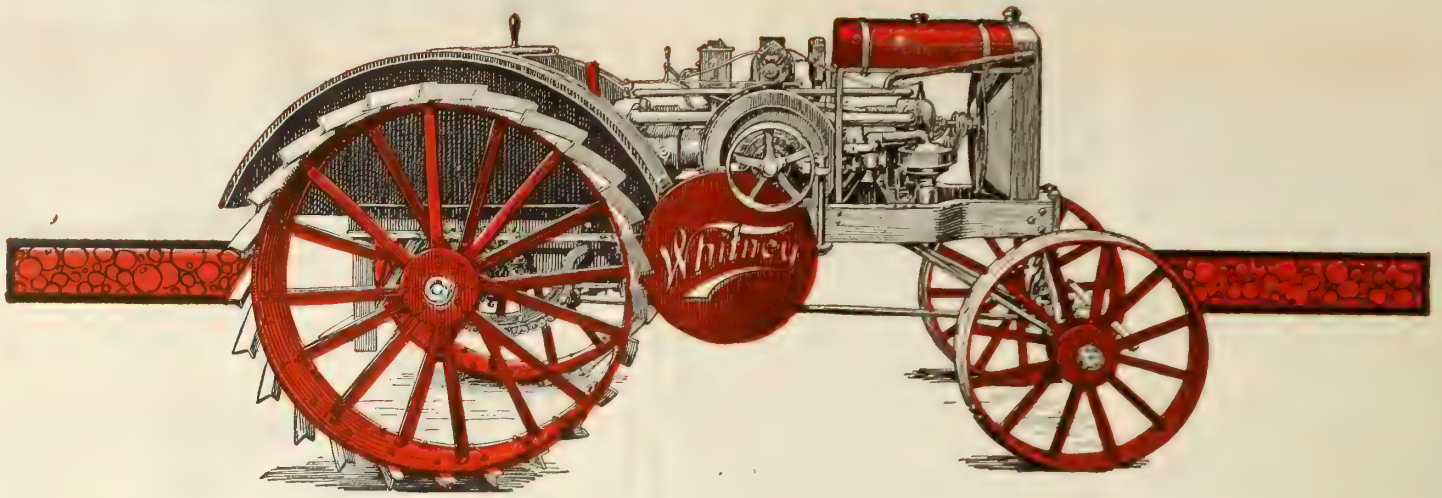
Makers of Columbia Storage Batteries

MADE IN CANADA

Fahnestock Spring Clip Binding Posts on Columbia Cell Number 6 without extra charge.

CANADIAN NATIONAL CARBON CO.
Limited
TORONTO AND WINNIPEG

Columbia Dry Batteries
—they last longer



The Whitney Tractor

NOT merely at a *reduced price!* A *new price* — based on a huge production — that will absolutely shatter all former standards of tractor value!

Whitney

A time tested tractor of the right size for heavy sales—and a price squarely in line with today's price of farm products.

THE Whitney tractor—the same, time-tested, quality-built Whitney that has heretofore sold for $1,175—is shortly coming on the market at a *new unheard-of price*—a price so staggeringly low that it will bring this sturdy, standard tractor *easily within the reach of every farmer in the country.*

A five million dollar corporation has been formed to concentrate all of its resources on the production, in tremendous quantities, of this one type of simple, reliable, time-proven tractor. Five years in the field in the hands of satisfied users.

Here's a tractor you can sell—and sell now—at the price of a good team of horses—and at a greater profit to you than practically any other tractor on the market today.

Its revolutionary price means just one thing to the far-sighted dealer who lines up now with Whitney—*the biggest opportunity for sales and profits that has ever been presented in any tractor line.*

At the new price, *you can place a Whitney on every farm in your territory.*

The opportunity is given to you to *line up now* with this ten million dollar corporation in the sale of this new-price Whitney.

Write or wire for advance information.
Get the facts at once.

THE WHITNEY TRACTOR COMPANY

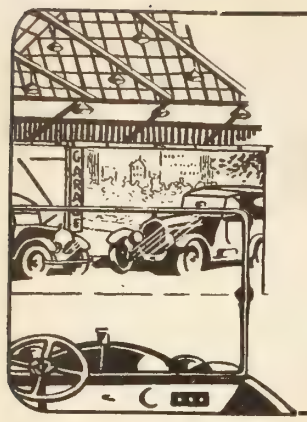
Prospect Ave., Cleveland, Ohio.

Brief Specifications

Power	— 9 H. P. on drawbar; 18 H. P. on belt.
Dimensions	— Length 123"; width 56"; height 68".
Weight	— Domestic shipping 3,000 lbs. Boxed for export, 3,900 lbs.
Transmission	— Selective, 3 forward—1¾, 2½ and 4 miles per hour. Reverse 2 M. P. H. All gears forged steel cut and hardened running in oil.
Motor	— 2 Cylinder opposed type 5½" bore, 6½" stroke, 750 rev. per minute.

The Whitney is a sturdy, time tested, field-proven two-plow tractor with the traction and strength of a three-plow tractor. Number of plows recommended for use with Whitney, two 14-inch; size thresher recommended, 22 x 34.

Whitney



SHOP NOTES FOR THE GARAGE MAN

How to Make Sectional Repairs on Cord Tires

By F. DE HORITY

A BRIEF description of cord tire construction is necessary in order to understand the directions for sectional repairs which follow. The number of plies of cords vary according to the size of the tire.

Each individual cord is a hard, tightly twisted cable cord, made up of strands of high grade, long staple cotton. The cords and the rubber in which they are buried form the body of the tire. The body of the tire is commonly known as the carcass or shoe.

The cords are laid diagonally across the tire from bead to bead. In one half of these plies the cords run on one diagonal and in the other half, the cords run on opposite diagonal.

There is of course different construction in different makes of tires. In the repairing of cord tires where the plies are grouped, any one of the following methods may be used, while in the repair of cord tires where alternative plies are criss-

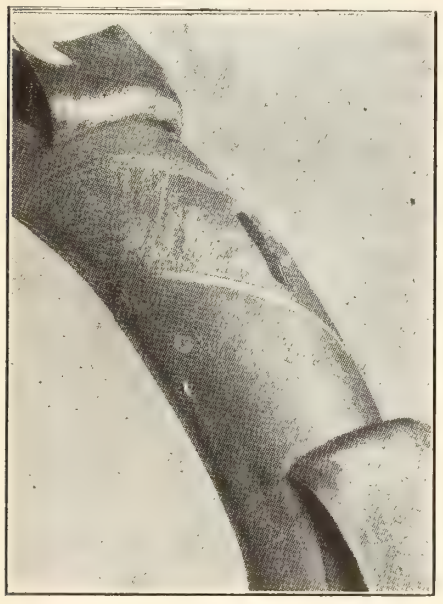


FIG. 1.

crossed, the latter two methods must be used.

Cord tires should be carefully examined to make sure that the casing is worth repairing before the tire is torn down. Care should be exercised in keeping all cemented surfaces free from dust and dirt.

Repairing Tire of Grouped Ply Type

Sectional repairs may be made on tires where the plies are grouped, as follows.

Lay back the tread both ways from the blowout sufficiently to allow cords being removed 1 inch to 1½ inch on either side of the break. Remove side-walls and chafing strips as shown in Fig 1. so that cords may be stripped out from end to end, allow a 1 inch step. Remove one ply of cords from outside and two plies of cords from the inside on 6 ply tires, and two plies from the outside, and two plies from the inside on 8 ply tires. Buff and clean carefully inside and out. Apply three coats of vulcanizing cement. Allow cement to dry until tacky, **not sticky**. Fill in break with cushion gum and rebuild with cord rebuilding a fabric. Rebuilding cords must end as nearly as possible at the same point corresponding cords were before the section was torn down. Apply two extra plies of cords on the diagonal on the inside slightly wider than the injury and extending from bead to bead. Replace chafing strips cover entire cord surface on the outside, with cushion gum 1-32inch gauge, replace side-wall, lay down tread and cure in sectional mold.

Repairs on Cords of Non Grouped Type

The following method may be used in repairing tires when the above section is too long to vulcanize in one cure. and in tires where plies are not grouped.

When the break is between the tread line, lay back the tread at least 2 inches further than plies are to be stepped out. Remove one half of the total number of plies from the outside of the tire. In eight ply tires, as shown in fig. 2. first ply should be cut about 4½ inches from the extreme point of the injury; in six ply tires, this distance should be about 3½ inches. The outer ply in all cases, is cut out around the bead to the toe of the bead, and the ply beneath is taken out to within 1 inch of the heel of the bead. Plies are stepped down 1 inch. Frayed end of cords are trimmed out of the break and the repair is then buffed, the inside of the tire being buffed for a distance of at least 4 inches at the end beyond the point where the outer ply was cut. Apply three coats of vulcanizing cement and allow to dry.

Rebuilding

Build up the inside of the repair first as follows. Stitch in a ply of cord fabric, cords running in opposite direction to the cords in the tire. This ply should extend ½ inch on each side of the point at which outer ply was cut and to within ½ inch of the toe of the bead. Over this play is placed another play 2 inches wider than the first ply and long enough to extend to the toe of the bead. This ply is only stitched down to within 2½ inches of the toe of the bead. Fill the hole in the carcass with cushion gum, build up the outside by covering the cemented surface with one ply of cushion gum, 1-31 inch gauge. Replace cords cut out, with cord fabric, cords running in the same direction as the original plies. New plies should over-run 3-4 inch and cords should run in the same direction as those on plies replaced. The last ply replaced should be cut long enough to extend around the bead on outside and 1½ inches above the bead on the inside of the tire.

After this ply is stitched down the inside reinforcing ply should be stitched down over it. Where the ply goes around the bead it should lap 3-4 inch as on the rest of the repair. Cover the outer surface with cushion gum 1-31 inch gauge, replace chafing strip and side-wall, lay down tread and cure in sectional mold.

Break Between Tread Line and Bead

When the break in the casing is between the tread line and the bead it is necessary to lay back the tread and remove the chafing strips and sidewalls. Remove 1-4 of the total number of plies that are in the casing from the outside and 1-4 the total number of plies in the tire from the inside. These plies are taken out from the outside in the same manner as in the method described for outside repairs, and the plies on the inside are stepped out from toe to toe and 1 inch narrower than the plies that were taken

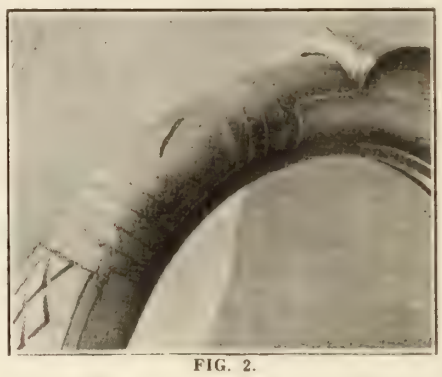


FIG. 2.

from the outside. Plies are stepped down 1 inch.

Trim out frayed end, buff and cement. Replace the plies as described in previous method. Apply one play of cushion gum both inside and out. Put one reinforcing ply on the inside, the cords running in the opposite direction to the cords in the last ply replaced. This ply should be stitched down over the last ply brought around the bead from the outside of the repair. Cure in sectional mold.

Small Injury between Tread Lines

When the cut or injury in the cord casing is no longer than 2½ inches and occurring between the tread lines a cord patch is used to effect a repair.

The inside of the casing from toe to toe

Method of repairing small injury between tread lines.

of the bead and somewhat wider than the patch to be applied is buffed thoroughly. Loose gum and fabric is then trimmed from the injury so that the edges of the plies do not touch, and the hole is free and open. The hole is tapered somewhat so that the inside is larger than the outside. The injury should be buffed thoroughly and cleaned with a cloth moistened with solvent. After which the outside of the repair should be cemented with vulcanizing cement. The inside of the casing where the cord patch is to be placed is cemented with three coats of quick cure vulcanizing cement.

When the cement is thoroughly dry the holland from the gum side of the cord patch is removed. and the patch applied with the use of a paddle. Care should be taken to stitch down thoroughly so that the patch is not bridged and no air is trapped. The oval in the patch should be directly over the injury whether the injury is in the centre of the tread or not.

After the patch has been stitched down into place the protruding edges are trimmed.

The uncured gum side of the patch should always be cleaned with a cloth moistened with solvent. If any stock from the holland sticks to the quick cure gum it can be removed with a rag moistened with water. It is then thoroughly cleaned with solvent, allowed to dry and applied.

After the patch is stitched into place the injury on the outside is filled up to the top of the breaker strip with cushion gum. The remaining part of the injury should be filled with tread gum, after which the repair is ready for cure.

FIRST AID FOR MAGNETOS

USUALLY you are told when you ask someone how to fix a magneto not to monkey with it. In spite of this, there are little things about magnetos that can be easily fixed and it pays to know what they are. Some of the common troubles of the magneto and their remedies are given below:

1. Dirty interrupter points. These are especially noticeable by the way they are when the magneto is running Usually all that is necessary is to wipe them off and file them down true with a fine file. The contact surfaces should meet squarely.

2. Failure of contact points to separate. In most magnetos the interrupter mechanism consists of a steel cam against which a fiber block strikes. The fiber block may wear away, thus leaving the breaker points in contact. Usually the adjustment of the contact screws will fix this, or it may be necessary to put in a new part. Look also to the spring to see that it has not lost its elasticity.

3. Loss of magnetism in the magnets. This can generally be detected easily by the lack of resistance when the armature is turned by hand. The remagnetizing is a job for the service station, since the average person does not have the necessary equipment.

4. Short circuited windings. Sometimes due to the clogging of the safety spark gap. The current may jump from one winding to another, puncturing the insulation in between. The magneto may still spark with a short, weak spark. Here again the only remedy is rewinding.

5. Short circuited condenser. The purpose of the condenser is to intensify the spark. When the insulation of the condenser has been punctured so that a short circuit is formed, the condenser no longer functions. The only remedy is a new condenser.

—Some of the recent Epigrams.

"Taxi-drivers can afford to drive customers away—we can't."

* *

"It's a GRAVE mistake to ignore 'Safety First.'"

* *

"All work and no En-ar-co maketh a fat junk-heap."

* *

"—we believe the Live Merchant will profit by using this Boy and Slate"

—a quotation .

THOUSANDS of people are talking about this sign. Thousands of people have commented on the Boy and Slate epigrams.

Every word uttered about this proposition is enthusiastic.

Garagemen and dealers in gasoline and lubricants recognize in this Boy and Slate Sign the biggest business-builder of the day.

Let Us Tell You About It

There are a few sections of the country where this Boy and Slate is not in use. Therein lies a golden opportunity for you. For, to any merchant reading this paper we will gladly send the most complete information about it, entirely without any cost or obligation whatsoever.

The Boy is life size. The Slate itself is 5 ft. wide. The whole sign is solid wood construction and is painted in natural colors.

We supply the epigrams—a new one for every other day of the year.

The minute you put this sign down in front of your place, you have planted there a lasting tribute to your agressiveness. Make the start now.

Get this coupon in to our Branch nearest you right away. By return mail all the information will be put right in your hands, so that you may know all about this wonder sign.

CANADIAN OIL COMPANIES LIMITED

Branches:

Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary.

To Canadian Oil Companies, Limited.

Nearest Branch .....

Send me the information about that En-ar-co Boy and Slate Proposition.

Name .....

Address .....

Town or City .....

I am in the ..... Business

(Indicate kind of business)

M.T.I.9

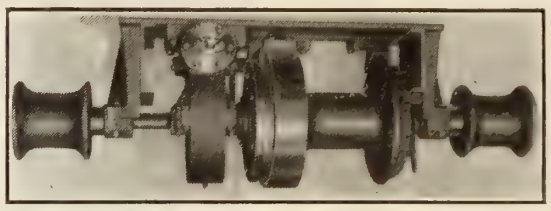
Automotive Accessories *and* Implement Equipment

UNDERSLUNG MOTOR TRUCK POWER WINCH

THIS winch is designed for loading and unloading motor trucks. It is an underslung winch with two nigger-heads which extend just outside of the end bearings. It fits under the rear end of the truck frame and will fit any truck regardless of width up to 9 in. frame. It leaves the entire body free for material.

The end bearings are bolted to the sides of the truck frame. The drive shaft is carried forward to the transmission, and by means of sprockets and chain the power is transmitted to the winch. The drive can be had on either side of the truck; this is accomplished by exchanging the worm shaft bearings. The worm and worm gear run in a bath of oil, in a dirt-proof housing. When the winch is used for loading, two sheaves are used, one is placed in the centre of the platform back of the cab, and the other is placed at the edge of the platform back of the cab, a rope is drawn through these sheaves and with two or three turns around the nigger-heads, heavy machinery etc., can be loaded on the truck with ease. The winch is also useful, it is claimed, for other heavy work and to pull the truck out of a deep rut or up a steep incline.

The ratio of the gearing is 42 to 1, or 21 to 1. Worm shaft, or driving shaft is 1 1-4 in. diameter and made any length to suit requirements. The worm shaft bearings are bronze bushed and are self oiling. Worm has a ball and thrust. No levers are required. The drive is accomplished by compling a propeller shaft to the worm shaft on the winch and extending it forward to the power take-off on the truck's transmission. The propeller shaft is driven from the transmission by sprockets and chain, the complete weight is 675 pounds. It is made by the Erie Hoist Co.



Underslung Motor Truck Power Winch.

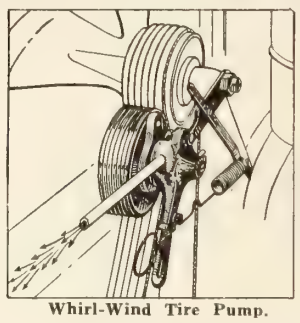
Hammerblow Timer.

HAMMERBLOW TIMER

IT IS A new invention which is embodied in this instrument and a radical departure from all the previous numerous endeavors in the same field.

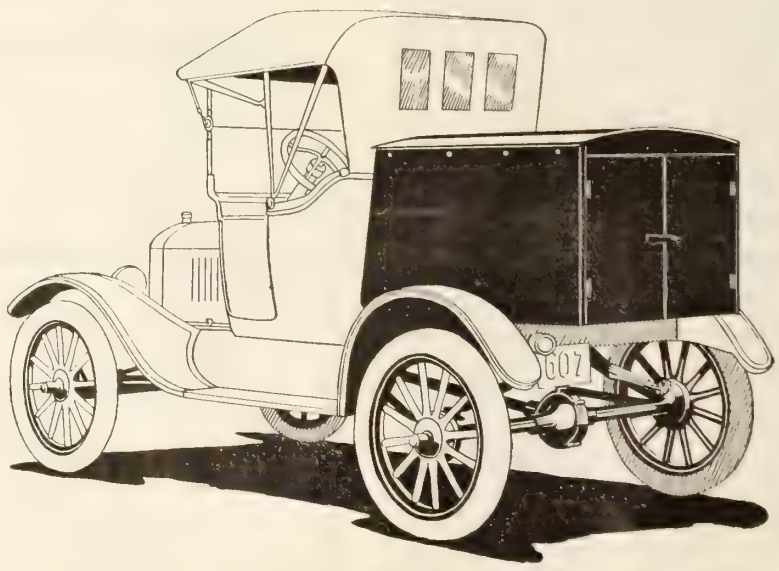
A hardened tool steel rod held in its place by a spiral spring is pressed against another hardened tool steelstud when the cam acting the instrument, rotates. This gives an intimate electrical contact which is abruptly broken with the passage of the cam. The breaking of the current is sudden which accounts for the saving of gasoline claimed in connection with this instrument. It is common knowledge that the main trouble in the Ford car comes from the vibrator on the coil which, being operated by a high frequency current generated in the Ford fly-wheel, has a tendency to lag and to give inaccurate ignition. The sudden interruption of the current in the Hammerblow Timer tears off these would be sticking vibrators which are thrown into action with every rupture of the current, giving the so desired regular click of the motor at low speed. With this timer, the ford motor can be run with a reduced flow of gasoline it is possible to reduce the flow of the gasoline by a quarter turn of the rod. The engine also idles much slower and picks up quickly.

The construction of th Timer is sturdy. The housing is made of cast manganese bronze. the moving parts are of hardened nichrome steel. There is no part to wear or to give way. It is manufactured by the Pro-Mo-Tor Fabricating Corp.



Whirl-Wind Tire Pump.

Door Handle for Fords.



Slip-On Body for Fords.

SLIP-ON BODY FOR FORDS

A STEEL slip-on body, designed especially to meet the requirements of salesmen, in the quick delivery of perishable goods etc., is being placed on the market by the Martin-Parry Corporation.

It is built of high grade automobile sheet steel finished in black enamel, and hard baked. It mounts on the rear of the roadster after removing the turtle deck. with the same bolts that hold the turtle deck in place. It is shipped completely knocked down. All parts of this body are interchangeable, and in the event of damage by accident any part can be quickly replaced.

It is built on a strong hard wood frame, the makers say, and is designed to be water-tight. It is especially convenient for carrying salesmen's samples, and for delivering small-package commodities. The rear door is equipped with a lock designed to take a padlock.

DOOR HANDLE FOR FORDS

A NEW locking door for Ford closed cars is being marketed by the Briggs and Stratton Co. This handle can be substituted for the standard Ford handle and can be installed in a few minutes. It is attractively finished and is said to eliminate the danger of theft of the contents of a car, as of the car itself. It is only necessary in installing to drill two holes in the door for the mounting screws and counterbore them for the retaining lugs on the base plate.

The makers say by using a locking handle on the right hand door, and by filing off the corners of the shaft of the left hand non-locking door now on the car so that it will not open the left hand door from the outside, it is possible to protect a Ford closed car by the use of only one locking handle and no inside catch of any kind. The car may thus be entered from the right hand side only, but both doors may be used for exit.

WHIRL-WIND TIRE PUMP

THIS is a motor driven tire pump built in the shape of a watch and measuring only three inches in diameter. It is for Ford cars. The makers say it can be connected in a few seconds and will pump a Ford tire up to the required pressure in about five minutes. It is of the rotary type.

It is held in position by a bracket which is attached to the end of the bolt, on which the fan pulley rotates. This bracket is supported by a small brace, connecting with the stud that holds the fan bracket in position. The bracket and spring are left permanently on the car.

When using the pump all that is required is to slip it on to the bracket and snap the small spring which holds it in contact with the fan belt from which the necessary power is taken. It is made by the Rotary Manufacturing Co.

HEMPY-COOPER REBABBITING JIG

THIS jig is for rebabbitting the main bearings and caps of Ford cars and Fordson tractors. An expert is not required to operate it. A cold jig, a cold block, hot babbitt, the makers claim, is all that is required to cast a perfect bearing.

Ports are never clogged, The jig opens and closes like a jack knife and it shears off all surplus babbitt. It is made by Hempy-Cooper Mfg. Co.

FLOOR LEVEL UNDER WORKER

THE Manley Under Worker elevates the car to any height desired so that the mechanic can work to advantage sitting in a natural position. It is instantly collapsible to place out of the way when not in use or to move from one position to another.

It is built of steel and cast iron. The two tracks are six inch channels stiffened in the middle. The rods tieing these channels to the front unit are steel. The uprights are made of 2½ inch steel pipe resting on heavy steel bases and braced in three directions. The horizontal chain drum is also made of 2½ inch pipeing and constitutes the top frame for the front unit. This drum rotates in open cast iron boxes, fitting over the uprights. These open boxes permit of easily and quickly taking the complete Under Worker apart if desired. The pipe drum is revolved, thus wrapping up the chains and pulling the car up the tracks, by a sprocket wheel and chain. The small sprocket wheel revolves on a heavy stud bolted at a convenient working height through the right hand upright.

The ratchet wheel is directly back of the sprocket wheel and the pawl is secured to the upper stud which also supports the chain guard.

The pipe constituting the chain drum is made long enough and holes are provided in it to push the left hand upright six inches further out for wide treads. The tie pieces on the bottom must also be lengthened on this distance. the small sprocket and chain are enclosed in a chain guard. The chain is made of 3-8 inch electric welded steel and the hook is a steel drop forging, heat treated.

Besides the ordinary work of repairing under a car the makers say the Under Worker is useful on the wash stand.

It is made by the Manley Mfg. Co

MANLEY TRUCK WHEEL DOLLY

THIS equipment is designed to handle the complete range of service work on all sizes, types and weights of truck wheels. The Manley Dolly, it is claimed eliminates all danger hitherto associated with the removal of heavy truck wheels, and provides a one-man method to raise and lower, remove and convey with ease and safety any size of truck wheel.

After the truck itself has been jacked up, the projecting forks of the dolly are lowered until they pass under the wheel. The crank handle is then turned until the weight of the wheel rests on these forks, and the dolly with its load may then be pulled out. To replace the wheel on the spindle these actions are reversed.

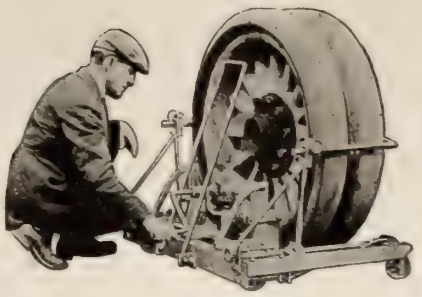
If the wheel is to be moved on the dolly, the holders are then swung against the tire, hooks adjusted back of the inner rim and the hand nuts tightened. These holders are to keep the wheel from falling off the forks when pulling the dolly with its load over the floor and are a safety precaution for this purpose.

The spread of the forks is such that when they are lowered to the floor they clear the tire of the wheel. When the crank handle is turned they are raised, elevating the wheel which then rests on these forks. When the wheel. is raised high enough to clear the floor it is supported by the dolly and its four casters permitting the operator to convey it to any location desired. The vertical movement of the forks is 5 inches, allowing ample range it is claimed to locate the wheel in the center of the spindle when replacing it or to remove it from the spindle of the truck which has been jacked up.

When the forks are lowered they release the truck wheel before they touch the floor, so that its weight is then taken on the floor, independent of the dolly, which may then be pulled away. The spread of the forks, it is are wide enough to clear the tire of a wheel 48 inches in diameter and the distance apart of the frame is also wide enough to take in a wheel of this size. The supporting capacity of the dolly is one ton and the leverage is so arranged that one man can raise this weight. The elevating screw rests on ball bearings.

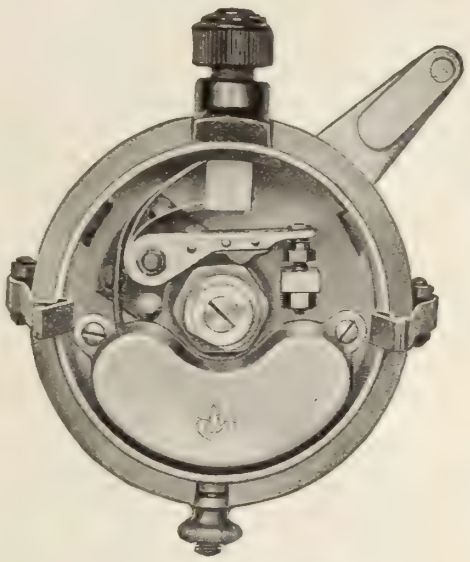
The frame is constructed of two steel angles, forming a U section tied together by cross pieces. The fork is composed of a high grade steel casting, braced and ribbed. The outward thrust of the forks is taken by rollers, supported and rolling on the rigidly braced uprights. The inward thrust of the forks is also taken by rollers bearing against the front side of the uprights.

The raising and lowering screw is made from 1 1-4 inch steel. On the top of the screw is a level gear and under this a ball bearing thrust which takes the total weight of the wheel. The dolly is 24 inches high, 44 inches wide, 37 inches deep, and weighs 210 pounds. It is manufactured by the Manley Manufacturing Co.

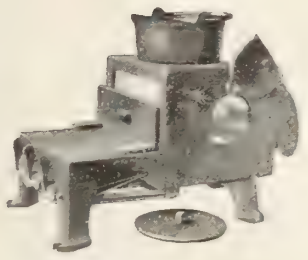


Manley Truck Wheel Dolly.

Floor Level Underworker



Bosch Contact Breaker for Battery Ignition System.



Johnson Bench Furnace

Bosch Battery Ignition System.

BOSCH BATTERY IGNITION SYSTEM

AUTOMOBILE dealers will be interested to learn that the manufacturers of the Bosch Magneto have just brought out a battery ignition system for automotive engines. The Bosch engineers have been working on it for the past four years, during which time they have been doing extensive study and research work. They claim that the system they have finally evolved has refinements and enduring and efficient.

The full hot spark which the Bosch coil produces the makers say, gives added efficiency because it fires every bit of gas in the cylinders, even though a lean mixture or poor grade of gas is used. Its penetrating power enables it to fire through dirty plugs, when a weaker system causes misfiring. The Bosch engineers claim that, by completely firing the gas mixture regularly and completely, this system and keeps it running smoothly, eliminating vibration, reducing the consumption of oil and causing minimum wear on the bearings.

It is supplied, if desired, with a timer-distributor for advancing the spark by manual means, or it can be obtained with a timer equipped with a governor which controls the time of spark occurrance without effort on the part of the driver. This is known as the Bosch Compensatin Governor. It is an ingenious device which takes over the control of the spark and keeps the engine operating at maximum efficiency at all speeds.

When the Bosch battery system is chosen for any type of engine, the Bosch engineers make tests to discover the spark advance curve which should be followed to keep the engine operating under ideal conditions. The compensating governor is then adjusted so that it will make the spark follow that curve, thus attaining maximum efficiency from the engine at all speeds. Results are thus secured it is said which cannot be obtained by the most accurate manual effort insofar as ignition is concerned.

BOGGS TILTING STEERING WHEEL

THE manufacturers claim for this steering wheel that by its simplified construction, overcomes two faults formerly found in tilting wheels, namely, play and noise. The Boggs wheel has fully fifteen square inches of metal contact between the wheel proper and the steering post. Play is revepnted by three brass posts and by the hinge. The wheel is made of solid brass—heavily nickeled—and polished mahogany. When tilted it gives the driver entering or leaving the car about eight inches more room.

The wheel is designed and manufactured by R. F. Wilson, 517 Concord Ave., Toronto, Ont.

JOHNSON BENCH FURNACE

THIS bench furnace is equipped with three powerful auto-blast burners, and has a gas consumption of 45 cubic feet an hour. The burners are each equipped with a pilot light so that they can be turned off independently of each other, and, it is claimed, any desired temperature can be maintained. It is also equipped with a 6-inch melting pot which holds 20 lbs. of soft metal.

The makers say this furnace will heat successfully soldering irons in the largest and smallest sizes. It can also be used for melting of babbitt and solder, and for heat treating any carbon tool steel. The lid on the hood may be removed as shown in the cut and the twenty pound capacity melting pot, supplied with the furnace, may be inserted for the melting of soft metal. The heating of long rods, the makers say, is also possible by opening the side doors on the hood. It is made by the Johnson Gas Appliance Company.

Massey-Harris Demonstrates Mammoth Reaper Thresher

FEW dealers here in Canada know that a local big implement firm is manufacturing in a big way, a reaper-thresher. As the name indicates, this machine, cuts the grain, threshes it and bags it ready for the elevator or mills,—all at one operation.

Most of us have seen pictures in some illustrated magazine, on a post-card from California or at the movies of a wide-swathed mule-drawn machine doing these very things. But the most of us really doubted the existence of such a big contraption. And if we did believe it, we regarded it outside the region of practical agriculture.

Yet to really consider the possibility of the thing, there is nothing more startling or impossible in a combined reaper-thresher outfit, than there is in a self-binder, which was regarded not so very long ago, as a passing inventor's freak. To cut the wheat, to carry it to a threshing machine and then to pass the grain through, separating the chaff, and straw from the winnowed wheat, is a comparatively easy thing in our modern farm operations. It is decidedly more simple than making a knotter for a self-binder, which is now past the age of wonder.

The Massey-Harris firm in Toronto, which has gained a world-wide reputation has been making these machines for South America, for the Southern States, and for Australasia for years, yes and shipping them out from Toronto, out past the big thrifty farmsteads of Old Ontario. Right past the farm doors here the trains carried thousands of these big machines and few farmers ever dreamed that these machines were possible.

"Why then, you ask, have not the Massey-Harris people tried them out here and induced our big Western wheat fields to use them?"

The answer is that such harvesting of grain is only possible in a very dry climate where the threshed grain will not heat when piled in sacks. People will recall some of their war pictures and despatches when wheat in Canada was held down from aeroplane stunts by that economic heresy the fixed price. In these pictures piles of sacks of wheat were noted on the wharves of Australia awaiting shipping that never came. Such sack piles would be impossible in Canada with her moist climates and rainy seasons. And so the reaper-thresher goes where the going for it is good.

But these machines are all tried out in Ontario before they are staged for real work in the other drier fields. One of these try-outs took place on the Lawrence farm at Downsview, Etobicoke township a few days ago when many of the Massey-Harris officials and many prominent men witnessed a machine pulling a twelve-foot swath of barley, actually cut, threshed and sacked on the field.

Mr. Geo. Valentine Vice-President of the company mounted the baggers table and explained on this occasion, just what led the company to put out the machines of the degrees of perfection reached and the way they operated on the big southern farms. Mr. East their mechanical expert from Australia was present and explained many of the details of construction and the reasons for the various wrinkles about the big device.

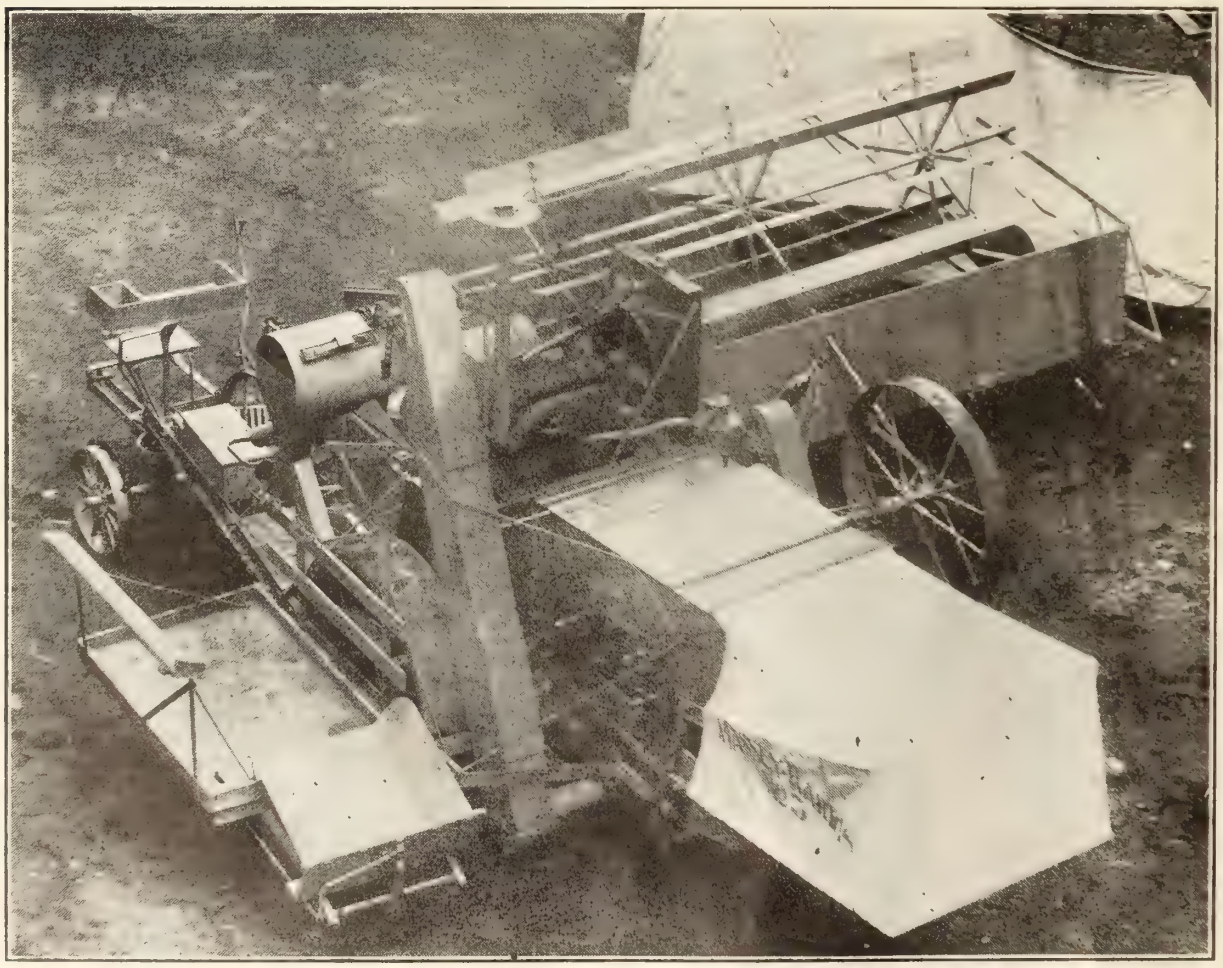
"In Australia," said Mr. East, "wheat requires 24 to 28 weeks to mature, as compared with a little more than half that time in Canada. The straw is also stiffer there than here, and it will stand for two months after the grain is ripened without shelling. In that country a machine can start when the grain is ripe and keep on cutting for six weeks without serious danger of loss of crop in the interval. Meantime the grain is thoroughly dried and can be safely bagged and shipped direct from the machine to store."

This machine weighed 6300 lbs. and was drawn by a big M. H. tractor which did not even turn a hair. Fixed securely on the frame of the machine was a gasoline engine of upwards of 20 horsepower, which drove the machinery. Thus the machine did not cease operations when the traction power stopped. Such enabled the machine to get itself cleaned out in a big crop and also enabled speed to be ready for the start in, where it would have to gain gradually were the traction of the drive wheel all that was depended on.

"The only limit," said Mr. Valentine, "to the size of the crop cut was the ability of the bagger to get the grain sacked and away from the table." And one who sees oats and wheat pouring out from a busy threshing machine, knows what haste has to be employed to keep the grain elevators free. This is overcome in many places by a wagon being drawn from a bar hitched to the tractor whereby a spout delivers the grain to the box.

At this demonstration the threshed straw was left in a row on the ground over which the reaper-thresher had passed. In that form, if desired, it could be easily raked up, although the machine is provided with an attachment by which the straw is left in heaps. In most countries where the machine is adapted for use the straw is not valued, and is simply burned where it falls.

The exhibit at this farm produced many complimentary remarks about the enterprise of a Canadian company which was attracting such favorable attention to Canada.



The Machine that Reaps, Threshes and Bags the Grain in the Field at One Time.

PREDICTS 1922 WILL BE BIG YEAR FOR AUTOMOBILE

ACCORDING to L. J. Ollier, vice-President of the Studebaker Corporation, 1922 will be a very brisk year for the automobile industry in Canada He bases his opinion on the per capita ownership of cars, the appreciation of the car by the Canadian people as a utility, and the buying power.

"Canada now has one car to every 21 people," said Mr. Ollier in commenting on the motor car situation recently. "While this figure is gratifying when compared to the per capita figures of Great Britain, which are one car to every 180 people, we can still climb, for we find that Canada's neighbor, the United States has one car to every 13 people.

"There is very little doubt in my mind but what Canada will equal the per capita figures of the United States, and the time for doing this is not far off. The Canadian people are all keenly aware of the value of an automobile as a time-saver, a health preserver and a business necessity. In every Province we find a greater portion of the people engaged in agricultural pursuits. Certainly, the motor car is an undisputable boon to the farmer, for it brings him closer to the city and relieves him of the former drudgery of long, tiresome drives, to say nothing of the aid an automobile lends to his pocketbook, in enabling him to get his produce to market and saving his time in innumerable ways. The value of a car to people in cities needs, no comment. Take all of the motor cars off the streets of Toronto and the result would be a pandemonium of confusion—almost a stagnation of business until some temporary means of transportation could be devised to take the place of the cars displaced.

"With the value of the automobile so evident, and the resources of Canada so bountiful, we feel in the Studebaker organization that Canada is a going concern which will demand hundreds of automobiles during 1922. I predict a brilliant year."

ALCO DELUX BATTERY

REALIZING the necessity of and appreciating the demand for a small car battery to retail at a low cost, The Cincinnati Storage Battery Company, are now putting on the market a battery which they call the Alco DeLux.

It is a six volt, full strength battery for Ford, Buick, Chevrolet, Overland and

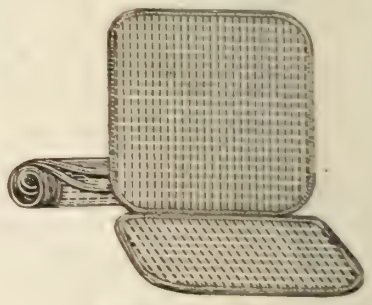
Arco Delux Battery.

other small cars. It is also especially adapted, the makers claim, for wireless outfits and for various other purposes requiring a small battery.

A feature of this battery, claimed by the makers is the insulation qualities of the wood separators which are manufactured by a special process. It is a well known fact that the life and usefulness of a storage battery is dependent upon its insulation.

EVER KLEAN SEAT PAD

THIS seat pad is made from a Japanese rice straw fabric which is extremely durable and pliable. The makers say that it is possible to roll it up into a com-



Ever Klean Seat Pad.

pact roll that is easy and convenient to carry from place to place.

The manufacturers claim a large number of uses that the pad is adapted to. It offers a cool clean seat which should be of special interest to motorists who desire to protect their clothing from any dust or grease that may gather on the upholstery. It is made by the Manufacturers Canadian Service Ltd., Montreal. Que.,

With The Manufacturers

Delco Light Co. and the Frigidaire Corp. have been consolidated by the General Motors Corp.

The De Laval Co. have announced reductions on milkers and cream separators; the reductions to take effect from September 1.

H. J. Edwards has resigned as manager of the Elyria plant of the Willys-Overland Co., where all the engines of the company are made.

The Belleville Motors Co., is a new incorporation with a capital stock of $40,000. They will manufacture and deal in automobiles.

F. W. Warner, formerly president of the Oakland Motor Car Co., has become connected with the Durant Motors Corp. recently formed by W.C. Durant.

P. E. Thring, formerly manager of Canadian Fairbanks Supply Dept., has been appointed sales manager by the Bond Engineering Works, Toronto.

Donald P. Hess has been appointed general manager of the Columbus plant of the Timken Roller Bearing Co. succeeding C.N. Replogle who has resigned.

The Smithville Metal Industries has been incorporated to carry on business as iron founders and to manufacture machinery, implements, tools, castings, etc. The capitalization is $200,000.

Announcement is made by the Ford Motor Co. of Canada of the appointment of H. Pritchard as sales manager. Mr. Pritchard is a native of Chatham, a graduate of the local Collegiate and Osgoode Hall, Toronto.

The John Watson Mfg. Co., of Ayr, Ont., whose factory was burned down some months ago are again under production, but are very much cramped for room pending the rebuilding of the plant which is already under way.

W. J. Ellis, general manager of the R. A. Lister Co., of Canada, Ltd., Toronto, Ont., recently paid a visit to the Winnipeg branch of that company, and held a series of meetings with the travellers in Manitoba territory.

The Verity Plow Co. plant, Brantford, Ont., which has been closed down since July, has recommenced operations. At the outset 200 men have been taken back and this will increase steadily until the whole force of about 500 men are employed

Allis-Chalmers Mfg. Co., Milwaukee, Wis., and the Russell Grader Mfg. Co., Minneapolis, Minn., have affiliated in the production and marketing of Russell Hi-Way Patrol, a new machine recently designed for the maintenance of dirt roads.

The United States Light and Heat Ltd., manufacturers of U.S.L. storage batteries, have established a Canadian branch factory at Niagara Falls, Ont. Charles E. Hill will be in charge of the factory which is equipped to take care of the entire Canadian business.

The Clark-Turner Piston Company of Los Angeles, California, manufacturers of the DE LUXE light weight cast iron pistons, announce that they can now furnish their pistons for over twelve hundred automobiles, trucks, tractors, motor cycles motor boats and aeroplanes. The Clark-Turner Company is adding new models to its stock almost daily, and at the present time, is in a position to furnish DE-LUXE Pistons for practically any internal combustion motor that is made.

Olin R. Smith, who for the past three years has been advertising manager of The Moto-Meter Company, Inc., Long Island City, N.Y., has resigned from that position to join the staff of the Palmer Advertising Service, 137 E. 43rd Street, N.Y. City.

F.W. Kamm, formerly sales manager of the tractor division of the Allis-Chalmers Mfg. Co., who resigned from that position last January on account of ill health died on August 12 at his home in Milwaukee. Mr. Kamm had been engaged in the agricultural business since 1900.

H. G. Weaver, familiar to readers of M.T.I. as the author of those peppy articles on power farming appearing in the Tractor Tract and issued by the Hyatt Roller Bearing Co., has severed his connection with that company to join the General Motors Corporation. Repair Page

The Parker Motor Car Co., Ltd., headed by Sir Alexander Bertram of Montreal are looking for a factory site where they intend to build the Parker Six, an all Canadian car. Two sites have already been considered but a decision has not yet been made. One of the sites is located at Longue Pointe, Que., and the other is that of the Canadian Motor and Machine Co., Quebec City.

The Haynes Tractor Co., Kokomo, Ind., has been incorporated with a capital of $2,000,000. This company is the result of a transaction by which Elwood Haynes, pioneer automobile builder, and president of the Haynes Automobile Co. and Geo. J. Marrott of Indianapolis have taken over all the holdings of the Holton Tractor Co. of Indianapolis. The company will manufacture a tractor to be known as the Haynes, which will embody a number of the features of the Holton. Production is to be started very shortly in one of the buildings of the Haynes Automobile Co., pending the construction of a tractor plant.

CORRECT ALIGNMENT IMPORTANT

IN THE days when the steam threshing outfits were most popular, it was necessary to have long drive belts so as to keep the engine far away from the separator and reduce the danger of fire from sparks. The use of internal combustion tractors has made it possible to use shorter belts and some of the older threshermen are finding it a little difficult to get the same wear out of the belts that they used to.

The trouble lies in alignment. With the long belts of days gone by, exact alignment was not necessary as sufficient latitude was allowed by the swing of the belts to keep them on the pulleys rather easily. With shorter belts it is necessary to have the driver and driven pulleys almost in exact alignment.

It pays to take an extra minute or two to arrive at this rather than be subject to the annoyance and trouble of belts that are constantly slipping off, not to speak of the danger of getting them torn to pieces.

BURD

High Compression

PISTON RINGS

The World's Standard of Efficiency

permanent efficiency, therefore give better service efficiency—maximum power at the lowest expense for gasoline and oil—and prolong the life of the motor by keeping it clean and free from carbon. They are unequalled for lasting resiliency and permanent efficiency, therefore give better service at the end of six months than when first installed.

Backed By This Guarantee

Every Burd High Compression Piston Ring is **Guaranteed** to be free from defects in material and workmanship—and warranted to give more power, with less fuel consumption, than any other piston ring—when installed in cylinders that have not been warped or scored—or your money will be refunded after thirty days' use.

For sale by jobbers everywhere.

BURD RING SALES COMPANY of CANADA
322 McIntyre Block, Winnipeg, Man.
Burd High Compression Ring Co.,
Rockford, Ill., U. S. A.

Overland

at $885

Is the greatest light-car value in Canada and offers dealers a wonderful opportunity for big turn-over. Some good territory is open and if you can finance an aggressive retail business it will pay you to get our proposition. Write today to

SALES MANAGER
Willys-Overland Limited
Head Office - Toronto, Canada

NEW PRICES
Effective Sept. 3, 1921

Overland	Touring Car	-	$	885
"	Roadster	-		885
"	Sedan	-		1,395
"	Coupe	-		1,295
"	Chassis	-		735

WILLYS-KNIGHT - NOW $2,400
Correspondence Also Invited as to Willys-Knight Contracts

Sales *plus* Service—

Spedolene service reaches right out to your territory, get to know the policy and class of the firm behind it, you'll find us only too glad to dig right into your lubrication sales troubles with you and will perhaps be able to submit you an idea that might result in greatly increased sales and satisfied customers for you.

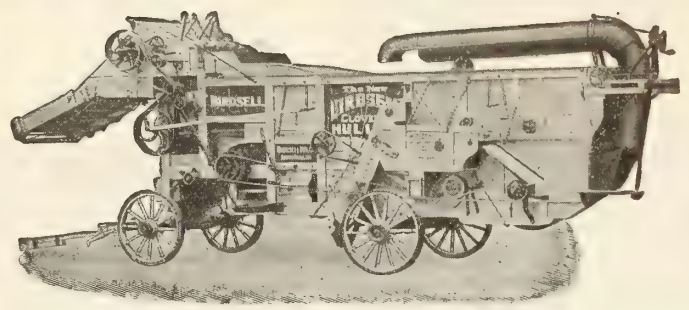
Spedolene's popularity has been built up on service, a service that starts from us to the dealer and that in turn reaches out to the motorist through the efficiency of the product.

SPEDOLENE is the only lubricant that contains asbestos, there lies the secret of its heat-resisting qualities. Asbestos is embodied in the best lubricating materials that can be obtained.

***Logically the best*—isn't it?**

We are offering a very attractive dealer proposition.

Spedolene Refining & Manufacturing Co., Ltd.
MONTREAL



BIRDSELL CLOVER HULLERS

65 YEARS IN THE FIELD

In these days of high costs you must get RELIABLE GOODS for money spent or your WASTE will consume all of your profit.

There was never a time when "QUALITY" has been in such demand. In Quality and Honestly constructed goods lies the hope of industry today. Buy wisely and you will have economy.

BIRDSELL HULLERS have years of experience behind them. They are not an experiment. They are built well and will last a life-time.

They hull and clean Red Clover, Mammoth Clover, Alsike and Sweet Clover seed.

BUILT IN THREE SIZES FOR CANADA

Birdsell Manufacturing Co. Foot of George St.
Toronto, Canada

NEWS — OF THE TRADE FOR THE TRADE

ALBERTA

RED DEER—An automobile and tractor repair business is being operated here by W. Irish.

CALGARY:—The Siegal Auto Co. Ltd., is a new concern handling automobiles, accessories and repairs.

BRITISH COLUMBIA

VICTORIA:—The tourist Auto Agency Ltd., have built an up-to-date brick office on Yates Street.

VANCOUVER:—P.H. Carter has retired from the Rand and Carter Tire Co., W. M. Rand is carrying on the business under the name of the Rand Tire Co.

MANITOBA

PORTAGE LA PRAIRIE:—The Portage Battery Co., is a new concern handling batteries and battery repairs.

WINNIPEG:—Partnership in the automobile business carried on under the name of Piggott and Badger. F. W. Piggott will control the business in future.

ONTARIO

COOKSVILLE:—A returned soldier has established a motor bus line between Cooksville and Toronto.

MILVERTON:—Incorporation is announced of the Great West Farm Machines Ltd., with a capital of $300,000.

CHATHAM:—J. C. Wanless is carrying on a successful tractor trade in connection with his hardware business.

ST. THOMAS:—J. T. Webster is handling automobiles, tractors, and road making machinery here.

GODERICH:—An automobile paint shop has just been opened by J. Cuthbertson. Painting and re-finishing on all classes of cars will be handled.

OTTAWA:—J. W. Lawson, formerly a blockman of the International Harvester Co., has been appointed motor truck salesman.

TRENTON:—The Anglo American Motors Ltd., have decided to erect a factory in Trenton for the purpose of manufacturing the Le Marne car.

SHELBURNE:—The implement business formerly carried on by G.W. Hepton, has been taken over by J. J. Hammond of Amaranth.

PORT CREDIT:—Vhe Port Credit Motors Ltd., have purchased property on the Hamilton Highway and will erect a garage to cost about $100,000.

FORT FRANCIS:—A. F. Warren has purchased the automobile repair and accessary business formerly conducted by G. F. Gillon & Co.

TORONTO:—The Gray Dort Motor Sales Co. have leased the ground floor of the Palmer House, northwest corner of King and York streets, which will be remodelled and used by them for their sales section.

RODNEY:—Snelgrove and Faulds, who were recently appointed Ford agents for Aldboro, have opened a first class service station and garage in the building formerly occupied by Ford and Smith. They will handle all kinds of repairs and carry a full line of accessories, oils, etc.

SASKATCHEWAN

LANGHAM:—A new tractor and implement business has been opened recently by L. Glenn.

MAPLE CREEK:—M.N. Mohler recently opened an automobile and tractor business here.

INDIAN HEAD:—J. F. Hunt is a new dealer handling automobiles and implements.

QUEBEC

HULL:—J.G. McGuire, Ltd., of Ottawa, distributors of the Chevrolet cars and trucks for Ottawa, have also been appointed agents for Hull. and district surrounding and may at a later date open a branch office in Hull.

LACHINE:—A new firm under the name of Adanac Motor Syndicate has been organized to manufacture motor trucks. The organization of the company is composed of Gordon A. Elmslie, H. Milton Purnell, B. H. T. McKenzie, B.A. Malkin, Robert Connon, A. T. Sutherland and H. Elmslie.

AMES-HOLDEN TIRE ISSUE

MONTREAL, Sept 1.—A letter to the shareholders of Ames-Holden Tire Company, Limited, from the President announces the decision of the directors, in view of the rapid growth of the company's business and the encouraging prospects for the future to sell the balance of the issue of $800,000 of the 8 per cent preferred stock of the company, in order to provide satisfactory working capital for the expansion of the business.

The company's financial statement shows that the profits for the half year ended June 30th were very satisfactory. In spite of the temporary trade depression, operations for July and August have shown still more substantial earnings. This has resulted in the decision of the directors—as recently announced—to declare a dividend of 8 per cent. on the preferred stock, completing all arrears up to date.

DURANT CAR TO BE BUILT IN CANADA

J. C. Durant, founder of General Motors Ltd., has purchased the Leaside Munitions Plant, at Leaside Ont., which was completed just at the close of the war and which has remained unoccupied ever since. The plant will be used for manufacturing the new Durant car in Canada and factory plans call for 100 finished cars a day. The buildings now on the property are to be utilized at once, and new ones are to be erected with a view to having the plant producing by March next. Mr. Durant proposes to manufacture in the Dominion every important part of the car, including electrical equipment and tires. A woodworking plant is to be constructed on the property for the manufacture of the bodies of the car. The main building now on the property is 130 by 640 feet and will form one of the units of a series of structures which will constitute the Durant manufacturing plant, and will be used as a machine shop, wherein all motors, axles and transmissions for the Vanadian company will be made. The building program also calls for the construction of a three-story assembly plant, 130 by 160 feet, directly to the rear of the present building.

A Proud Diplomat.—A small boy was asked to dine at the home of a distinguished professor, and his mother, fearing he might commit some breach of etiquette, gave him repeated directions as to what he should and should not do.

Upon his return from the great occasion she questioned, "Richard, did you get along at the table all right?"

"Oh yes, mother, well enough."

"You are sure you didn't do anything that was not perfectly polite and gentlemanly?"

"Why no—nothing to speak of."

"Then something did happen. Tell me at once." she demanded.

"Why, while I was trying to cut the meat it slipped off on to the floor. But I made it all right."

"What did you do?"

"Oh, I just said, sort of carelessly, 'That's always the way with tough meat!'"
—Harper's Magazine.

MAYBE ADAM LAUGHED AT THESE

Willis—I told you to give me the funny part of the paper. This isn't it.
Mrs. Willis—Yes, it is. That's the part that tells how prices are coming down.

Mabel—Are you interested in art?
Florence (blushing)—Well I do know him, but not well enough to call him by his first name—Judge..

Trapped—Hemmandhaw—What in the world has come over Umson? I never saw such a grouch.
Shimmerpate—He has lost faith in mankind.
"How is that?"
"A chap picked him up in an automobile on the way down town the other day—"
"Yes—"
"And just before they reached the business district the chap hung out a jitney sign."—Youngstown Telegram.

Traffic Cop—Hey, there! Don't you know you can't turn around on this street?
Barney—I think I can make it all right, sor.—Judge.

Guide—This yere's the famous Dead Man's Corner. More'n thirty automobiles hev gone over the edge.
Tourist—But surely the road could be widened!
Guide—Not on your life, Mister! The more accidents there is, the more famous the corner gets!—Passing Show (London).

Summer Boarder (to young farmer leaning against the fence, in earnest conversation with his sweetheart)—I say young man, is your honey fresh?
Hiram, Jr.—None o' yer goldarned business.—Pitt Panther.

Good Business—"Say, Jim," said the friend of the taxicab driver, standing in front of the vehicle. "there's a purse lying on the floor of your car."
The driver looked carefully around and then whispered:
"Sometimes when business is bad I put it there and leave the door open. It's empty, but you've no idea how many people jump in for a short drive when they see it."—Edinburgh Scotsman.

What He Would Do.—"What would you do if you had a million dollars?" asks the *Memphis Appeal.* We'd overhaul "Restless Rebecca," get four spare tires— stock up with delicatessen, point the radiator into the sun, throw her into high speed and chase summer weather all around the world. Then we'd turn the balance of the money over to some charitable institution that has more use for money than we would have.—Buffalo News.

Matrimonial Problem.—Among those present at a colored function in Mobile was a Mrs. Melinda Jackson, who evinced great interest in the lady in the booth labelled "Clairvoyant". Mrs. Jackson immediately consulted the seeress with respect to her future.
"Yo' is gwine to visit furrin lands," said the clairvoyant. "Yo' is gwine to conquer all rivals an' marry de man of yo' choice. He will be tall an' handsome an' aristocratic an' wealthy."
"An' is he gwine to be young?" asked Mrs. Jackson, her bosom heaving with excitement.
"Yes, he's shore to be young," said the clairvoyant.
Whereupon Mrs. Jackson clasped the fortune teller's hands and pressed them hard.
"I thanks yo', an' now tell me one thing mo'. How's I gwine to git rid of mah present husband?"—Philadelphia Public Ledger.

Get your share of Cletrac Profits

Cletrac is leading right now. Its tank-type tracks—its ability to do all sorts of farm jobs whatever the weather, make it the fastest selling tractor to-day. And Cletrac brings profits the year through because it delivers work all four seasons.

Crops are good and farmers who have been talking tractors will soon all be **buying.** Now's the time to join the Cletrac Crew and make sure of your full share of the business. Start to-day to round up prospects. You'll find Cletrac a big money maker. Over and over again Cletrac has proved its ability to do "more kinds of work more days in the year."

SPECIFICATIONS

Horsepower: 12 at draw-bar, 20 at belt-pulley.
Length: 96 inches.
Width: 50 inches
Height: 52 inches.
Weight: 3455 pounds.
Turning Circle: 12 feet.
Traction surface: About 800 square inches.
Centre to Centre of Tracks: 38 inches.
Belt-Pulley: Diameter 8 inches, face 6 inches.

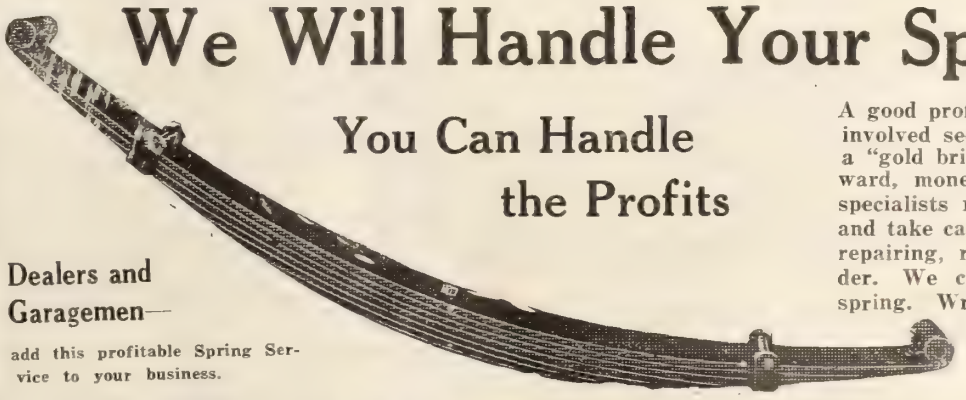
We have a dealer proposition that's sure to please. Write us to-day for the details. Get our instructive booklet, "Pay Dirt in the Tractor Field."

THE CLEVELAND TRACTOR COMPANY
OF CANADA, LIMITED

Home Office: WINDSOR, ONT.
Western Sales Office: 261 Fort Street, Winnipeg, Man.

Cletrac TANK-TYPE TRACTOR

We Will Handle Your Spring Jobs



You Can Handle the Profits

Dealers and Garagemen—
add this profitable Spring Service to your business.

A good profit for yourself with no work involved seems almost like handing out a "gold brick." But it's a straight-forward, money making proposition. Our specialists relieve you of all annoyance and take care of every spring problem—repairing, rebuilding, or making to order. We can fit any car, repair any spring. Write for our live proposition.

COZENS & MAYNARD *Automobile and Truck Spring Service Station* **4 to 6 Wood St. TORONTO**

CANADIAN Motor, Tractor and Implement Trade Journal BUYERS DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

AUTO ACCESSORIES
Auto Top & Equipment Co., 270 Dundas St. W., Toronto.
Brown Engineering Corp'n, Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Cozens & Maynard 4-6 Wood St., Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
Lamontagne, Ltd., Montreal.
Motor Mart of Montreal, Montreal, Que.
Russell Gear & Machine Co., Ltd., Toronto.
Shaw Auto Salvage Parts Supply Co., Toronto.
Manufacturers Canadian Service, Ltd., Montreal.
Willys-Overland Ltd., West Toronto.

AUTOMOBILE LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILES
Motor Mart of Montreal, Montreal, Que.
Willys Overland Ltd., West Toronto.

AUTOMOBILE TIRES
Ames, Holden, McCready, Montreal.

BARN EQUIPMENT

BEAN MACHINERY

BEET MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BEARINGS

BINDERS
Birdsell Mfg. Co., South Bend, Ind.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING

BATTERIES

CARRIAGES

CREAM SEPARATORS
De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS

CORN HARVESTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CORN MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CULTIVATORS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CUTTERS

DAIRY SUPPLIES
De Laval Co., Ltd., Peterboro.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

DIES

DISCS

DITCHING MACHINES

DRILLS, TWIST

DRILLS, GRAIN
International Harvester Co., of Can., Ltd., Hamilton, Ont.

ELECTRICAL EQUIPMENT

ENGINES
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

ENSILAGE CUTTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

FEEDERS

FARM MACHINERY
Birdsell Mfg. Co., South Bend, Ind.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

FEED CUTTERS

FENCE POSTS

FENCING

GRAIN BLOWERS.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

GRINDERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
S. Vessot & Co., Joliette, P.Q.

HARROWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HAY LOADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HAY RAKES

HAY CARRIERS

HAY PRESSES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HULLERS (Clover)

LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

LIGHTING SYSTEMS
R. A. Lister Co. (Canada), Ltd., Toronto

LIME AND FERTILIZER SOWERS

LUBRICANTS
Canadian Oil Co., Toronto.
Imperial Oil Co., Ltd., Toronto.

MACHINE TOOLS
Windsor Machine and Tool Works, Windsor.

MANURE CARRIERS

MANURE SPREADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MARINE FITTINGS

MOWERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MILKING MACHINES
De Laval Co., Ltd., Peterboro.
R. A. Lister Co. (Canada), Ltd., Toronto

MILLING CUTTERS

OILS
Canadian Oil Co., Toronto.

PISTON RINGS
Brown Engineering Corp'n, Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Lamontagne Ltd., Montreal, Que.

PLOWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER AND LIGHT EQUIPMENT
R. A. Lister Co. of Canada, Ltd., Toronto.

POWER MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER SWITCHBOARDS

POTATO MACHINERY

PULVERIZERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

PULPERS

RAKES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAPERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAMERS

ROLLERS

ROLLER BEARINGS

SCUFFLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SEEDERS

SCALES

SCREW PLATES

STABLE EQUIPMENT

SILOS

SLEIGHS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SILO FILLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SOCKET WRENCHES

SEPARATORS (CREAM)
De Laval Co., Ltd., Peterboro.
R. A. Lister Co. (of Canada), Ltd., Toronto, Ont.

SPREADERS, MANURE
International Harvester Co., of Can. Ltd., Hamilton, Ont.

SPARK PLUGS
Russell Gear & Machine Co., Toronto.

SPRINGS
Cozens & Maynard, Toronto.

STARTERS
Imperial Agencies, 81 Victoria St., Toronto.

STAMPINGS

TELEPHONE APPARATUS

TRACTORS
Cleveland Tractor Co., of Canada,
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

TRACTOR PLOWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

TOOLS
Windsor Machine and Tool Works. Windsor.

THRESHERS
Birdsell Mfg. Co., South Bend, Ind.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

THREAD CUTTING TAPS

TIRES
Ames, Holden, McCready, Montreal.

TWIST DRILLS

TRUCKS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

WAGONS
International Harvester Co., of Can. Ltd., Hamilton, Ont.

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Are You Going To Build?

These books contain up-to-date information. They are full of ideas that may save you money.

The prices charged here are extremely reasonable. They include postage paid to your address.

Building a Home ...$1.50
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Spring time offers an opportunity for studying your business. Read what authorities say in the following books on farming, postage paid:

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MacLean Publishing Co.
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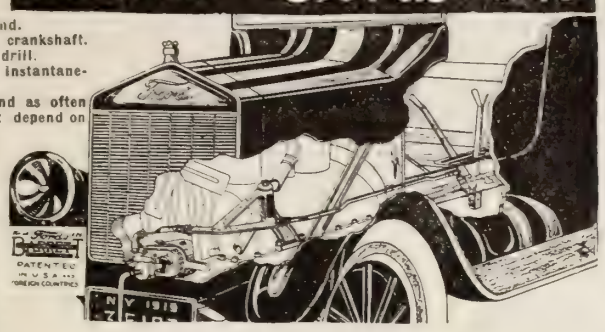
Simple, Durable, Economical, Reliable,

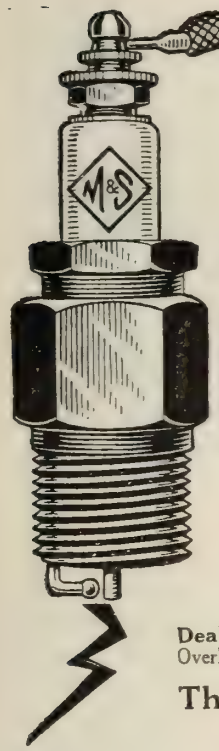
BARRETT
SELF STARTER AND PRIMER

GUARANTEED FOR FIVE YEARS — For all Fords — $ 40



RELEASES automatically in case of backfire and does no harm to the operator, engine or starter.
No cables, no chains, no pulleys and no springs to wind.
75% increase of leverage on crankshaft.
Easy to install, no holes to drill.
It STARTS COLD ENGINE instantaneously even in zero weather.
Ready for starting any time and as often as wanted because it does not depend on the running of the engine for power.
All essential parts made of the very best steel.
ABSOLUTELY NOISELESS.
Not a luxury but a necessity.
Endorsed by prominent automobile engineers and mechanical Ford experts as mechanically perfect in every respect and the best that has come under their observation.
The Special Primer which is supplied free with every Starter, vaporizes the gasoline direct into the cylinders, assuring a quick, positive start. The Primer is also operated from the seat.

From agents or direct from
IMPERIAL AGENCIES, 195 Victoria St., TORONTO



M&S

"The Plug with the Hotter Spark"

The ball point of the "M & S" plug creates a larger and hotter spark, causing more complete combustion. This hot spark will give your car new life and more power.

The three-in-one terminal is adapted to any style ignition wiring. The high grade chemically glazed porcelains are interchangeable—one porcelain fits all plugs.

Dealers—The "M & S" plug is standard equipment on the Overland "4". Ask your jobber for them.

The Russell Gear & Machine Co.
Limited
1209 King Street West, Toronto

MADE IN CANADA

104

GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

Dealers !

Are you prepared for the FALL demand of

Anti-Skid Tire Chains,
Radiator Covers,
Alc-O-Rene Anti-Freeze,
Caldwell All-Wool Rugs,
Gauntlets,
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Prices* on these lines have been *Reduced

WRITE FOR NEW PRICES

KEYES SUPPLY CO.
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Wholesale Automotive Equipment
OTTAWA, ONTARIO

Tel. Q. 880—Private Branch Exchange connecting all Departments.

Change the Style of Your Car

as many times a year as
ci rcumtances or fancy demands

A new car—at the price of an accessory

A new car—at the price of an accessory.
You keep your old chassis that's the reason. Our remodelling service will transform it from touring to closed, from roadster to coupe, from closed to open—any way you want.
And you get a top designed and built by expert coach builders. It will look like a new high-priced car. But it's cheap, and best of all, you keep the old reliable engine.
We need a live agent in your locality. Are you the man? Write us for proposition or call at the Canadian National Exhibition.

AUTO TOP & EQUIPMENT CO., Limited
270 Dundas Street West, Toronto

"EVERYTHING ABOVE THE CHASSIS"

Sell the line already half sold

The Test of the Years

Most farm machines work well when NEW.

LISTER Farm Machines

stand the test of year after year of hard going on Canadian farms.

We welcome comparisons years after the sale just as keenly as we do any other time.

Years of service emphasize the value of Lister thoroughness, and explain why Lister is the line for you.

THE Lister line includes:

LISTER SILO FILLER
LISTER GRAIN GRINDER
LISTER ENGINE
MELOTTE CREAM SEPARATOR
LISTER PREMIER CREAM SEPARATOR
LISTER MILKER

Write for literature and agency terms.

R. A. Lister & Co. (Canada) Limited

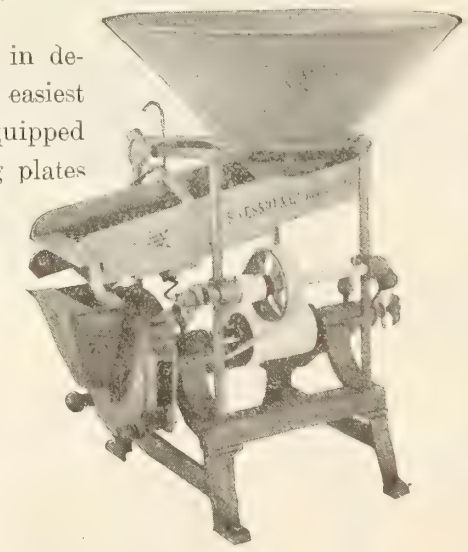
Stewart St. (near King and Bathurst) Toronto
or at Wall St. and Portage Ave., Winnipeg.

Sell the Feed Grinder that gives the least trouble

TRADE MARK S.V. REG

Your customers are not millers or mechanics, but farmers. When a Feed Grinder is purchased your farmer customers want day by day service uninterrupted by breakdowns or needed adjustments.

Sell him a "Vessot"—simple in design, sturdy in construction, easiest to adjust and operate, and equipped with the very best grinding plates that can be made. The "Vessot" is easy to sell, most farmers are educated to look for the "S.V." mark on the plates of the grinder they purchase.



Get in touch with The International Harvester Company.

Invented and Manufactured by

S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by
International Harvester Co. of Canada, Limited
Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Estevan, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John

Dairy *and* Household Supplies

AUSTIN AUTOMATIC FARM LIGHTING PLANT

THE Austin lighting sets are entirely automatic in their working, being self-starting, self-regulating and self-stopping. It is not claimed that they require absolutely no attention, although under suitable conditions, the makers claim they would run for a considerable period without attention. The small amount of attention required can be given when convenient. Occasional oiling, cleaning, general supervision, and, in the case of gasoline or kerosene engines, replenishing the fuel will suffice.

A normal size of battery is used. When the battery is discharged the engine automatically starts, and when it is fully charged it automatically stops, the frequency depending on the amount of current used. By the use of the battery the engine is not kept running when only a few lights are required and reserve power is provided in case of a breakdown.

The plant is extremely compact, so that only a small engine room and inexpensive foundations are required.

The complete plant consists of the engine, bedplate, cooling water tank and radiator,fuel tank, water exhaust, fuel piping up to 10 feet, foundation bolts and silencer, specially compound wound dynamo and automatic controller and automatic fuel tap.

The engine is of the vertical, four cycle, completely enclosed type, specially designed for constant working at full load, and for running for long periods without attention. All parts are made to jig and gauge, and have a high standard of accuracy.

Cylinders and pistons are of special, hard, close-grained cast iron, the working parts being ground and polished. Each piston is fitted with three rings. The gudgeon pin is hardened and ground. The crankshaft is machined from a solid nickel-chrome steel forging, ground and polished.

Forced feed lubrication is fitted throughout, the oil being drawn from a reservoir in the bottom of the crankcase and pumped under pressure to all the main bearings and through the crankshaft to the connecting rods. The oil supply is kept constant at all speeds by an adjustable relief valve, and a gauze strainer retains all solid matter. An oil pressure gauge is fitted.

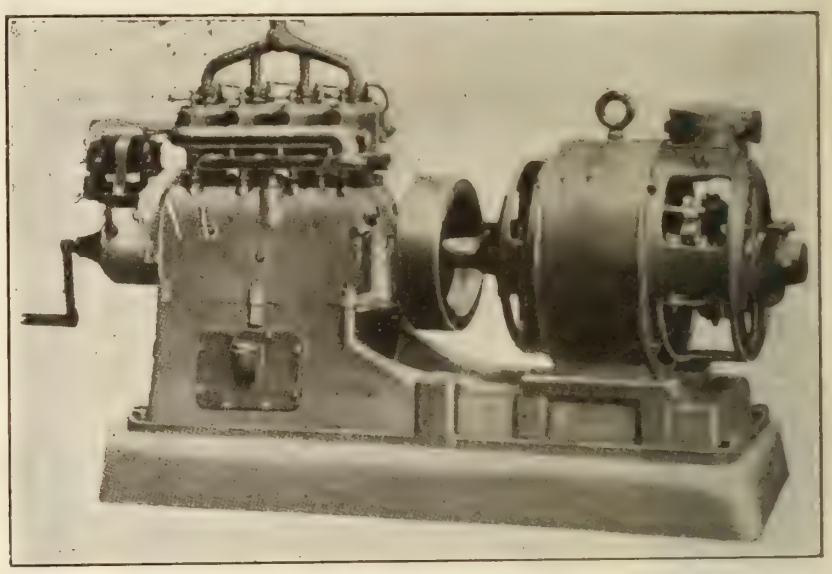
A governor of the centrifugal type enclosed in an oil-tight case is used. It actuates a throttle on the inlet, regulating the actual supply of mixture to engine.

For gasoline a single jet mechanical automatic carburator is fitted, the governor rod acting direct on to the throttle. When kerosene is used a special exhaust—heated vaporiser is provided. It has one float chamber and is arranged for starting the engine on petrol. A thermostat automatically changes over to kerosene when the engine is hot enough to supply a thoroughly mixed gas to the cylinders, perfect combustion being thus maintained. No blow lamp or external flame is necessary.

All gears are machine-cut from the solid.

The Automatic controller is of the switchboard pattern and consists of an enamelled slate panel complete with insulated corner fixing bolts. On this panel are mounted the following instruments; master instrument, controlling voltage, ammeter voltmeter, voltmeter switch, automatic battery charge and discharges regulator with operating motor, circuit breaker, switches, fuses, etc etc.

These plants are made in various sizes and capacities. The manufacturers are the Austin Motor Co., Ltd., Northfield, Birmingham, England, and Montreal, P.Q.



Austin Farm Lighting Plant.

DE LAVAL PRICE REDUCTIONS

TO stimulate the production of milk and butter-fat, which promises to be exceptionally profitable during the fall and winter months, the De Laval Company will give all buyers of its milkers and separators the benefit of 1922 reduced prices from September 1, 1921. Allowing for increased capacity and other improvements made meanwhile, the new reductions bring De Laval cream separator prices practically to pre-war level.

With the continued relatively high prices for dairy products, abundant and cheap supplies of feed, the market value of crops may be doubled by feeding them to good dairy cows.

DON'T RUN BELTS TOO TIGHT

BELTS should not be run too tight because undue tension puts a strain on the bearings, pressing the oil out from between the shaft and the bearing, thus causing it to run hot or maybe causing it to be ruined. Just enough tension should be put on the belt to make it cling well to the pulleys; any slack should be on the upper half as this will tend to increase the arc of contact. Good practice indicates that no pulley should be smaller than 2 inches in diameter and it is well to have at least 2 inches of diameter in pulley for each ply in the belt. Pulleys also should be made a little bit wider than the belts.

WINNIPEG FIRM CHANGES NAME

W. R. HAY & CO., 54 Sherbrooke St. Winnipeg have become incorporated under the name Maybuilt Radiators Ltd., manufacturing radiators for automobiles, trucks and tractors. The firm has been located in Winnipeg for twenty years. Just recently special equipment has been installed which makes it possible to increase the output of radiators.

Double Sales Possibilities

The De Laval Separator
The De Laval Milker

The De Laval Separator has been a great money maker for agents who have sold it. The leader in its field, a wide demand, universal satisfaction in use, backed by the most aggressive sales effort, the most consistent advertising, and the last word in service, have made the position of the DeLaval Separator in a sales way impregnable. It is the "backbone" and the "bread and butter" of many a merchant's line.

Now the De Laval Milker offers just as great possibilities as the De Laval Separator. It is just as superior to all other milkers as the De Laval Separator is to all other separators. Wherever it is in use owners have nothing but praise for it. It is a better way of milking and no dairyman can afford to be without it.

Get in touch with us if we are not adequately represented in your community.

THE DE LAVAL COMPANY, Ltd.
MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

Sooner or later you will sell the

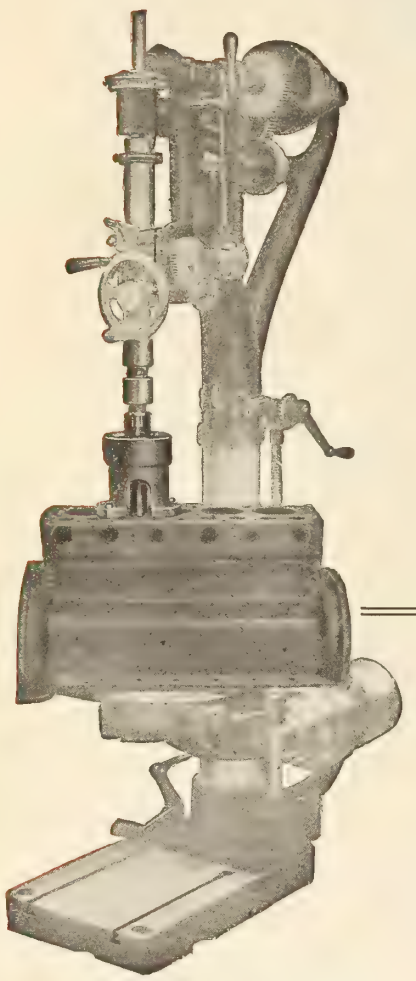
De Laval

Cream Separator or Milker

"Yes, this is the Quick Service Garage

Why sure, send your car right down

and we will rebore the block, fit oversize pistons with "Wilkie" Rings and guarantee you the motor will have more power than ever."



Operating with power-driven drill press

You see, we now have a reboring department of our own and with the

UNIVERSAL CYLINDER REBORING TOOL

we can give our customers prompt and expert service on all reboring jobs, and guarantee a satisfactory job.

Can you give your customers this kind of service? You can if you install a Universal Cylinder Reboring Tool. It's a fast and accurate worker from the word go.

In fact when you use the Universal Cylinder reboring Tool you have the identical tool used and recommended by all the big automobile factories. With it you can turn out the same kind of work that they do. Isn't it profitable to do this? Think of the money in your pocket when you can corral all the reboring work in your town.

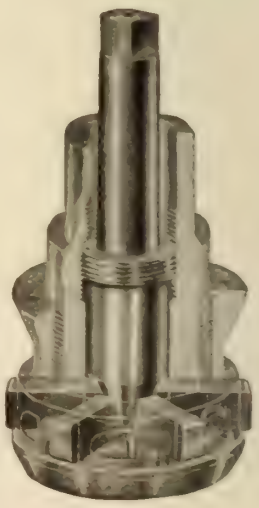
Why delay longer about putting this profitable tool to work? Write us now for complete information and list of jobbers.

We also make the well known "Wilkie" Piston Rings.

Why the Universal Cuts so Clean

The Universal Always Leaves a Smooth, Clean Bore

Owing to conical point of pin corresponding to the taper on back of cutters, which are ground so that the exact amount of cutting clearance is given, and being adjusted all at once by simply turning the adjusting pin, makes it impossible for each cutter to take off other than an equal amount of stock.



Cutter-Head

Windsor Machine and Tool Works

312 - 316 Pitt Street West, Windsor, Ont.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

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VOL. III, No. 10 TORONTO, OCTOBER, 1921 Subscription Price $2.00 Per Year

PETTERS LIMITED YEOVIL, ENGLAND

Petter Junior Oil Engines--2½ and 5 B.H.P., Hopper Cooled are now obtainable in Canada

These engines are primarily designed for Kerosene and distillates such as Benzol, Alcohol, etc., and can be adapted to run on gasoline and town gas.

All H. P. ratings are on a very conservative basis

The chief feature of the design is its extreme

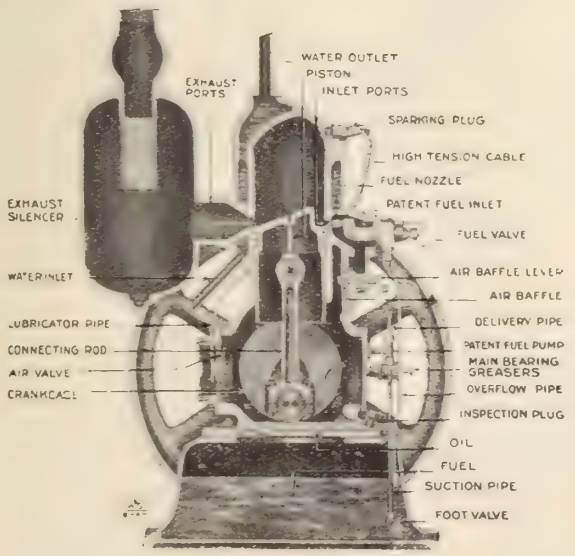
SIMPLICITY

No Valve Springs **No Delicate Carburettor**

Extremely efficient lubrication, combined with large bearing surfaces.

"One of the numerous testimonials that we have received states that one of these engines ran for 289 hours without a stop and when examined showed no signs of wear."

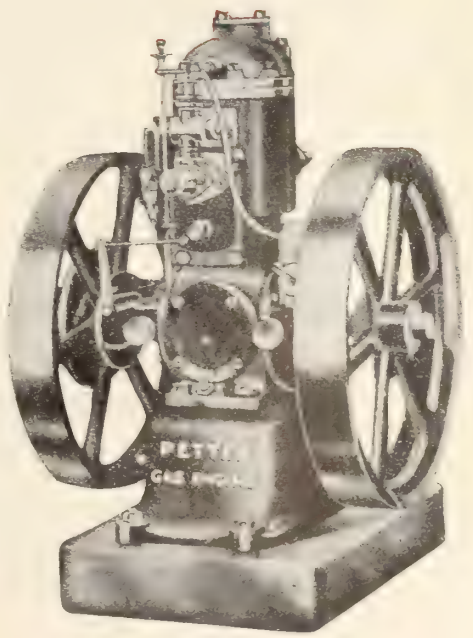
Agents Wanted



Write for our booklet No. 561 B, containing full descriptive data on Petter Junior Oil Engines and Petter Light Electric Lighting Sets.

We are able to furnish full data on operating costs, etc., and will be pleased to outline our proposition to agents.

Complete Permanent Guarantee covering each engine—yet in 35 years this guarantee has never been called upon.



R. S. GRIFFITH

371 ST. JAMES STREET MONTREAL, Que.

N. B.—The 8 H. P. Tank cooled engine combines all the above features and can be supplied to operate on crude oil.

Gill

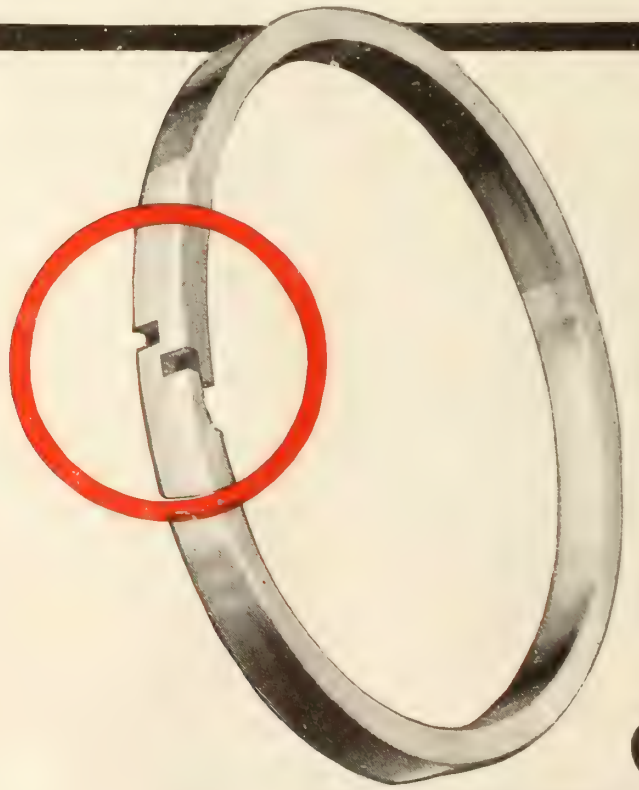
One-piece Piston Rings

prevent loss of power

because: they press so snugly and firmly against the cylinder walls at ***all*** points that gas cannot waste past them. All of the fuel is compressed into power. And they do this satisfactorily through thousands of miles of service because they are cast ***individually*** from a special gray iron that retains its elasticity and tension under the stress and strain of the hardest usage. They prevent carbon accumulation too, and thus remove another cause of power loss.

MADE IN CANADA BY

BROWN ENGINEERING CORPORATION, Limited
415-19 King Street, West Telephone Adelaide 425
TORONTO, CANADA



Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint ***alone.***

Gill Piston Rings are obtainable for every make of internal combustion engine manufactured. In case you are unable to secure Gill Rings, we will be glad to furnish you the name of the nearest Gill Jobber.

Stocks carried in all the principal cities and towns of Canada by Canadian General Electric Company, Limited

How 700 Dealers Tripled Their Sales In One Year

WE live in a day when real salesmanship alone brings the greatest reward. Implement dealers or others who are not aggressive—who fail to develop every selling possibility—will come out at the small end of the horn. You must know *how* to sell to make big money today.

The Rumely Tractor School teaches power-implement men how to be better business men—to increase their sales and make more money.

Results Tell

LAST year 37% of all Advance-Rumely dealers attended the tractor schools.

Investigations show that the total volume of business done by this 37% was nearly double the total business of the 63% who did not come to the schools. In other words the average business of the school-trained dealer was nearly *three times as much as that of* the dealer who passed up the schools—in a single year after taking our free course.

The Rumely Tractor Schools were created to help Rumely dealers sell. The instruction is given by experts in sales, engineering, service, etc., absolutely free of charge. Attendance requirements are very modest. And the above figures show what big results are produced.

A Rumely School in Your Section This Year

MANY dealers who have attended the Rumely Tractor Schools have traveled thousands of miles to La Porte, Indiana. This year such long trips will not be necessary. Schools identical in every way with the school at La Porte, Indiana, will be held at Advance-Rumely branches throughout the country. You will be saved the long trip both ways. You will get the same instruction nearer home. No dealer who wants to be successful, to make more money, should miss this.

Write for This Book

THE complete story of the great Rumely Tractor Schools—how they are operated—what they teach dealers—what they have done—and the greater things we expect them to do for Rumely dealers—is told in this book. In addition there are many letters from dealers who have been here—wonderful testimonials—proof that no man should miss. If you are interested in being successful and making more money, get the book. It points the way straight as a die. Tells when and where schools will be held. Merely write us on your letterhead and the book will be sent free.

The Rumely Tractor School is merely one example of how the Advance-Rumely Thresher Company co-operates with dealers.

This is the BOOK
Write for it on your letterhead

Advance-Rumely Thresher Co., Inc.

Calgary, Alta. Regina, Sask.
Saskatoon, Sask. Winnipeg, Man.
48 Abell Street, Toronto, Ont.

(H55)

RUMELY OIL PULL TRACTOR LA PORTE IND.

ADVANCE-RUMELY

The HART OF YOUR CAR

The
HART
STORAGE
BATTERY

Same in Quality and Down to Pre-war Price

Garages and Service Stations—do you realize that Hart Batteries are

MOST PROFITABLE

Once sold they stay sold—

YOUR PROFIT STAYS WITH YOU

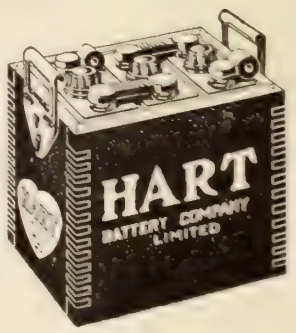
The record of HART SERVICE STATIONS shows that the service costs of the Hart are almost nil. A good profit on the original sale—and a good friend in the motorist who buys from you. Hart batteries are rapidly increasing in popularity due to

THEIR EXCELLENT PERFORMANCE

Now is the time to get tuned up for the revival of business which is fast approaching.

We are determined to have aggressive representation in every part of Canada.

Be first in writing for our proposition for your district.
Write us today.



HART BATTERY COMPANY, LIMITED

SALES OFFICE Drummond Building, Montreal
Works at St. Johns, P. Q.
WESTERN SALES OFFICE
Galt Building, Corner Bannatyne Ave. and Princess St., Winnipeg, Man.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 TORONTO, OCTOBER, 1921 Number 10

A Drive on Automotive Equipment

The Dealer Should Make Up His Mind Now the Amount of Business He Wants To Do This Winter; He Should Set It High. Advertising and the Sales Letters Should Be Shaped To Convince Customers Winter Driving Is Possible and Desirable

TO AVOID the usual slump in winter trade, why not start something now? A drive on winter automotive equipment at this time would be beneficial. When preparing your advertising and sales letters shape them to convince your customers that it is possible and desirable to run their cars all the year round. This should not be a very difficult matter when one considers the multifarious devices on the automotive dealer's list designed for comfort and safety.

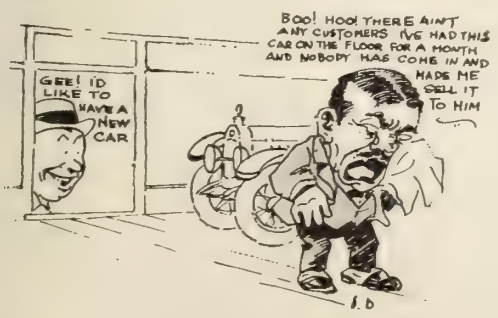
It is a good plan to study the condition of the roads and be able at any time to report on their condition. This is important; and the fact that the road leading from the town to the 'nth line is in good condition can be used to advantage in your sales letters.

Equipment such as heaters, radiator covers, non-skid chains, curtains, tops, robes, foot warmers, headlights, trouble lamps, anti-freeze preparations, windshield wipers, driving gauntlets, etc., are not accessories but real necessities and must be used by motorists in the winter. In your advertising and window dsplay give prominence to such equipment.

Too much importance cannot be attached to the window display. The window is one of the dealer's best publicity mediums. It should be dressed to the best possible advantage with seasonable equipment well displayed.

Tell your customers that your whole organization is behind every sale you make, no matter how trifling.

Set the amount of business you want to do each day, week, and month, set it high enough, and go to it hard. Remember the old saying, "Hitch your waggon to a star." If you aim at the stars you may not touch them but you are sure to hit something away up that is worth while.


BOO! HOO! THERE AIN'T ANY CUSTOMERS I'VE HAD THIS CAR ON THE FLOOR FOR A MONTH AND NOBODY HAS COME IN AND MADE ME SELL IT TO HIM
GEE! I'D LIKE TO HAVE A NEW CAR

GET A GOOD slogan and include it in all your advertising and letters. Let your prospective customers know in every conceivable way what goods you sell; tell them what you can do and then do it. Never be in the position of the merchant who says he has "just run out of it"—always keep it in stock. Put up a sign so that everybody may know without having to ask a policeman or look up a directory that you sell automotive equipments. Make your sign tell your story and tell it big.

As we said in a previous issue a great deal can be sold at the gasoline pumps and at the door, but there is an immense amount of business in your district which does not ordinarily come to your door. The mail-order house gets some of this business but most of it is just lying dormant waiting to be awakened. It is the dealer's job to find that business and convert a potentiality into a reality and hard cash.

Sleeping is all right in bed, but a live garage is no place for a hammock.

It is not possible always to make personal contact. The most effective substitute known for personal contact is publicity in all its forms, advertising and window display will bring customers into your store and practically every customer who comes in comes in for something. It should not be possible for a customer to go away from your place without taking something with him—if not some article, some ideas concerning your methods and service. If your service is right he will buy some other time.

Speaking about selling automotive equipment a successful dealer said recently:

"When my advertising and window displays have brought customers into my place, I make sure they are well received, and that they buy their equipment from me. I believe many dealers get people coming to their stores and don't take advantage of these opportunities to increase sales. Of course, we don't bother the life out of everyone who comes in to make him buy something. We have a man who serves gasoline, oil and air, and does other service work. This man becomes acquainted with our customers and their needs and when he notices that they require spare tubes, patches, tires or other equipment he suggests that these accessories will add to their comfort and increase their tire mileage and usually sells them these articles. This service salesman sells enough equipment to make this department of our sales large and profitable."

CUSTOMERS don't like to be kept waiting. See to it that you are always ready for a customer when he comes in. He reacts favorably to such treatment. It is often possible to interest a person in an article others than that for which he asks. When a man asks for a couple of spark plugs and after you have sold him what he wants why not suggest to him that it would be a wise plan to have an extra set for emergency use?

Educate your salesmen to sell, show them the difference between being a salesman and merely a clerk, they should be directed and encouraged to study their merchandise, to know it so well that no customers can ask a question which they cannot answer.

Both the dealer and his salesman should know their merchandise and have definitely in mind why they should sell certain equipment, and then be able to tell prospective customers why they should own it.

Stocks don't require to be excessive but should cover all lines suitable to the dealer's district. In a district where the cheaper makes of cars predominate the wise dealer will naturally stock heavily in equipment for such cars. But it would be a mistake to neglect to provide supplies for the higher priced cars. In every district there are some such cars that will require equipment from time to time. The aim should be to have everything in stock, but adjusted to meet requirements.

We are convinced if the dealer sticks to it day and night, works till he sweats, he will surely turn the trick and register a big increase in business during the coming winter.

Educate your salesmen to sell. Show them the difference between being a salesman and merely a clerk.

We are indebted to the Timken Magazine for the sketches used on this page. Clyde E. Darr is the Artist.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published on the fifth of each month by

The MacLean Publishing Co., Limited
TORONTO, MONTREAL, WINNIPEG

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VOL. 3 TORONTO, OCTOBER, 1921 No 10

Don't Wait and Worry

IT IS A great game these days to prophesy what is going to happen to business in the next three months. Experts usually indulge in this game. Another interesting game and one just as feverishly practised, and also indulged in by experts, is that one of trying to find out just what happened to business to make it so sick.

Every day we read in the papers that some expert has found out the real cause of the trouble. Isn't it strange that throughout all this prophesying and probing activity very little is being done or suggested by these experts about curing the disease.

It is like a sick man surrounded by medical specialists who are more interested in proving their theories than in making the patient better.

One doctor, a brain specialist, naturally tries to trace the cause to some irregularity in the cranium; a heart specialist believes the trouble is due to improper circulation, and the stomach expert is sure the trouble is gastronomical. Now if no one gets busy about a cure the patient is likely to die.

Some experts regarding the condition of business say it is suffering from swelled-head, caused by over-prosperity during the last year of war. Others say our system of distribution is bad, we need better transportation facilities, etc. Another class of expert believes our balance of exports and imports isn't correct, the exchange is against us etc. etc. So we could go on indefinitely; but this game leads nowhere.

No! we are wrong in saying it leads nowhere. It has led many a dealer into the valley of pessimism and inertia. The cry, "nobody wants to buy," is heard on all sides, and the unfortunate thing about it is, some dealers, believing business can't be got, sit down and mope. Because they have heard the cry "nobody wants to buy" they make no attempt to prove whether it is right or wrong.

We are convinced it is wrong. There is a market today which can be cultivated to the dealer's profit. If business does not come in the regular way we are apt to think there is none, and neglect to think up ways and means of creating it.

In many cases it does not have to be created. It is there and knocking at the door, but we don't recognise it.

We were speaking to a business man the other day who related a curious story. He lives in a small town of about 6,000 population, but which boasts of about six garages. He wanted a second-hand car, and as he is interested in distributing a certain line of goods, he thought he would try an experiment to see if dealers are awake. In the local papers he inserted an ad. describing the kind of car he wanted, this ad. appeared twice, and sad to relate drew no answers. He is convinced now the local dealers don't read their home papers as carefully as they should.

Dealers don't usually expect to pick up business by reading the "wanted" columns of their local papers, but why overlook the possibility of business being there?

We know of another man who has for the past year been meeting at lunch several friends who are in the automobile business. Each day business conditions are discussed, the automobile men being loud in their optimism and full of schemes, but, in spite of the fact that this man has not got a car and can well afford one not once have his friends asked him to buy. Possibly never thought of him as a prospect.

Doubtless there are numerous dealers with numerous friends who might buy cars if they were asked. Anyway it is worth the effort.

Perhaps if we had more vision we would see these things. There are buyers all around us, even among our best friends, who have hitherto been out of focus with our selling machine.

By all means let's have a selling organization that is pliable, and adjustable to every condition. We have tried the time-worn methods, let's now adjust our machine to a broader and larger focus. Let's use the God-given faculties we already possess and get busy.

Being interested in the prophesies of the experts is all right; we may learn a little about international finance, exchange and inflation etc.; but if we don't get busy about our own businesses and try to develop ways and means of building them up, such knowledge will be of little use to us when our notes become due.

The implement business has been bad this year all over the country. Dealers everywhere say the farmers simply refuse to buy. Yet there is a full blooded Indian selling farm implements in a small town not far from Toronto who has sold more machinery during the last year than he ever did during previous years. He is selling to white people too and has to face the usual opposition from dealers in his town handling other lines, the other dealers said the farmer wouldn't buy, but the Indian wanted to know so he went out and got the knowledge and a lot of business. He has no novel "stunt," his policy is to go out after the business and keep after it every day.

There is a dormant market for cars, accessories, tractors and implements, but it must be aroused. We have all the implements necessary to arousing it but we require to put them into commission. After arousing this dormant market it should not be impossible to interest it to the point of buying.

Lower Implement Prices

IMPLEMENT dealers all over the country will be interested in the announcement of lower prices by the manufacturers of agricultural implements.

We think this move to lower prices is in the best interest of the industry. Dealers have been complaining of farmers refusing to buy because of the high price of implements. Farmers seeing the prices of their own products dwindling, naturally resented the steady prices of agricultural machinery. It was of little use trying to convince him that the prices of raw material and the cost of fabricating same remained high, and any reduction in implements would mean a big loss to the manufacturer. All that he could see was his depleted bank account and he refused to invest anything in new equipment until some more was made to meet his demand for lower prices.

Whether he was reasonable in his demand or not is of little consequence, but the fact that he refused to buy on a large scale mattered a great deal. After all the supply and the demand has a lot to do with the regulation of prices. If there is little demand something has got to be done to stimulate it, and price adjustments must always be part of the stimulating scheme.

We feel sure the dealer will be encouraged to new endeavour by the turn of events. He has now a real argument to put up to the farmer, and the fact that the new prices are made at a sacrifice should be a sufficient argument to counter the farmer's cry of reduced profits.

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Let's Go

THE tractor demonstrations this month at Maizerets, Quebec, Oct. 11, 12, 13, under the auspices of the Quebec Plowmen's Association and at Woodstock, Oct. 19, 20, 21, under the auspices of the Ontario Plowmen's Association should draw a large percentage of the dealers and farmers from all over Eastern Canada.

The new feature at Woodstock of the test between the tractor and the horse should be followed with great interest by both farmers and dealers.

Dealers, do not overlook the importance of these demonstrations. The farmer comes to them in a receptive frame of mind and that condition should be capitalized. In the ordinary course of business it is very difficult to get the farmer into a buying mood, he is busy about something else and the dealer, before he can sell him anything, has to create interest. At the plowing match and demonstration he is in a mood to see and learn and enjoy himself.

So make arrangements to attend one or both of these demonstrations, get all your best selling artillery ready and fare forth to conquer.

Cheerfulness As An Asset

FORTUNATE is he who understands the gospel of happiness, the philosophy of sweet content; who is a devotee of the religion of laughter. It was Ella Wheeler Wilcox who said: "Laugh and the world laughs with you; weep and you weep alone." A forgotten rhymster declared: "It is easy enough to be pleasant when the world goes by with a song, but the man worth while is the man who can smile when everything goes dead wrong." Both of these are absolutely true to human nature. We would stumble through a dark forest to follow laughter, but run from a grouch. We dread our friend's complaint about his sour stomach as much as we dread the plaintive wail of a fretful baby.

It is natural to love the sunshine of life and to dread its shadows and storms. How much does this trait in human nature affect us in our business career? It has indeed so much to do with it that the only man who can really afford a sad countenance is the one whose fortune is already made and safely salted away in government bonds.

Can a solicitor sell you anything when he comes into your office with tears in his voice and tells you what a miserable place the world is? Never. Could a man get you to join in an investment if he opened the subject with a vision of gloom? Not at all. He would frighten you at the first word out of all possibility of risking your money. Can you get the best out of your associates and employees when you come down in the morning with a bad grouch and snap off everybody? You know very well that when you do you throw a wet blanket over the whole works. You do your own work in a half-hearted way and you get only half-hearted support from your helpers.—De Luxe Reinforcements.

Servicing the Farm Tractor

Article II.---The Four Cycle Principle

By L. G. HEIMPEL, B. S. A.

This is the second of a series of articles designed to help the tractor dealer, and as the principle is the same in automobile engines as in the tractor engine, many of the remarks in these articles apply equally to the automobile dealer. Particularly those referring to timing will be of interest to the automobile man.

Mr. Heimpel is a professor of farm engineering at Macdonald College, Quebec, and is in a position to speak with authority in everything relating to gasoline engines. Any questions that are worrying our readers regarding any part of these articles, or if there is anything they want elucidated, Mr. Heimpel will be pleased to go into the matter with them. These questions should be sent in to the editor.

—Editor's Note

FREQUENTLY a service man will deliver an engine to a new owner and instead of giving him lectures on the "innards" of the engine he will immediately talk the operating end. He may talk about cleaning spark plugs, lubrication or ignition while the new owner, who, nine times out of ten, has no idea of gas engine principles, tries to remember this matter of instructions as a cure all for future troubles. Such instructions are not going to be of much use to the new owner when trouble comes.

Most service men know gas engines thoroughly, but like most of us, they forget that before one can talk intelligently about engine details such as ignition, current, production or the details of carburetion there must be a thorough understanding of the simple, almost self-evident, principles which form the foundation of gas engine operation and which likewise must be the foundation of all intelligent understanding of this subject. So many of us forget that somewhere in the past we had to dig into the functions of engine parts and four-cycle principles before we could master the more involved things about gas engineering. It is hopeless to expect a new farmer tractor-owner to become an engineer before he knows the difference between a crank-shaft and a commutator.

The Four-Cycle Principle.

Before any substance can be burned conditions for combustion must be such as to make combustion possible, that is, there must be a proper place for the burning, and a supply of fuel, then after the fire there must be a method of getting rid of the smoke. In gas engine operations these four conditions for a good fire or explosion are termed as follows:

(1) Feeding the fuel or "intake."
(2) Preparing for a fast strong fire "compression."
(3) The fire or "power delivery."
(4) Getting rid of the smoke or "exhaust."

These four events are necessary to complete an explosion and because they must always be present in definite order they are referred to as a "cycle" of operations or events. In the gas engine used in tractors these four events are distributed over two complete revolutions of the crank-shaft. When cranking an engine it will be noticed that the piston travels the full length of its run for every half revolution of the crank, starting from inner or head-end dead centre to outer or crank end dead centre is one-half revolution of the crank or one stroke of the piston. Thus, each revolution of the crank is composed of two strokes of the piston, the out-stroke and the instroke.

The four events necessary to complete an explosion in a gas-engine cylinder are almost equally divided among the four strokes of the piston. Starting with the piston at upper dead centre, as in Fig 1. A. the inlet valve will be held open while the piston travels from the upper to the lower end of its stroke. This causes a vacuum in the cylinder above the piston and the suction thus produced draws in a mixture of gasolene or kerosene vapor and air in proper proportions to make a burning mixture through the carburetor. This is known as the "intake stroke."

Fig 1. 6, shows the piston starting on its return stroke, both valves are closed, the cylinder full of gas is compressed as the piston travels back on its second stroke; this is known as the "compression stroke."

Fig 1, c, shows the piston again at upper dead centre and both valves are closed, the gas is compressed to about 70 lbs. per square inch and just as the piston passes this point it is set on fire by the spark. This causes an explosion and the piston is driven out on the third stroke with tremendous force. This stroke is called the "power stroke" and supplies power not only to drive cars and tractors but to carry the crank shaft through the other three or non-power strokes. It is for this reason that single-cylinder gas-engines have such heavy fly-wheels, the momentum of the power stroke is stored in the fly-wheels and serves to carry the crankshaft over the other three strokes necessary to each explosion.

In Fig 1, D, the piston has completed the power stroke and the exhaust valve is shown open. As the piston travels up on its fourth stroke the burnt gasses or smoke is forced out through the exhaust valve. This stroke is known as the exhaust stroke—and completes the four events necessary to an explosion.

Because these four events are completed in four strokes of the piston this engine was called the "four-stroke cycle engine." This term has been shortened to the "four-cycle engine."

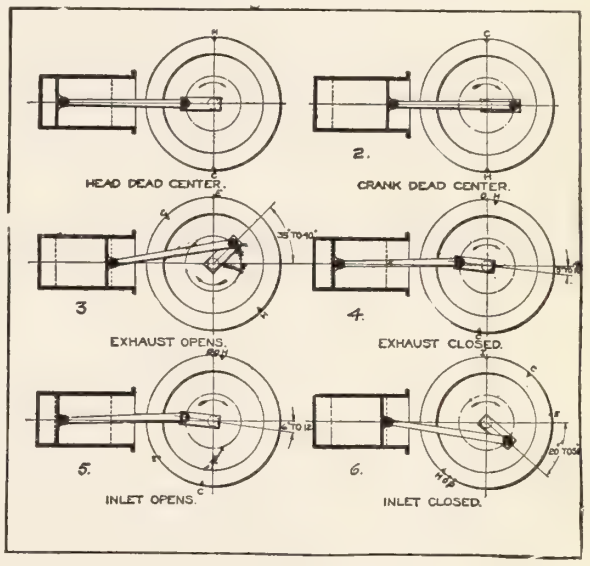


FIG. 2

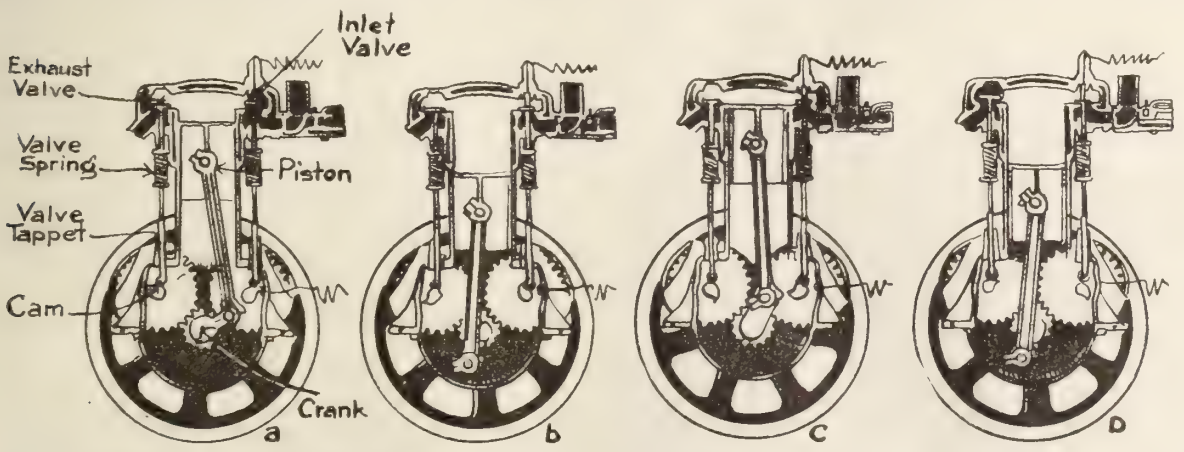


FIG. I.—Sectional Diagrams through a Single Cylinder of a Gasoline Engine, showing the four successive stages in the four cycle working. In these diagrams both the inlet and exhaust valves are positively operated from cams on secondary shafts. The cam shafts, as shown, being on a two-to-one reduction, turn half as fast as the main shaft. A shows the cams and piston in the position of half way through the inlet stroke, when as seen, the inlet valve is held open. B shows the beginning of the compression stroke, all valves being closed. C shows the engine ready for firing, all valves still closed. D shows the end of the firing stroke and the beginning of the exhaust, the exhaust valve being open. The view of the engine is that seen when looking toward the front of the vehicle. The fly-wheel rotates clockwise; the cam shafts counter-clockwise.

What Goes with the Four-Stroke-Cycle.

Once a man has grasped the principles outlined in Fig 1 we are ready to proceed with the details which make the engine we are running either an engine with pep and power or one which wheezes, slackens and stalls as soon as a load is applied.

There is probably no detail which has so much to say as to the efficiency of a gas engine as has the timing of the valves. The importance of having the valves open and close at the precise point in the revolution of the crank is often under-estimated and the service man should be imbued with its importance if he would be efficient. An instance in the field will serve to show just what we mean. A two-cylinder tractor was driving a silage-cutter filling silos. We happened to reach the scene and noticed that they were cutting bands of sheaves and feeding only half-a-sheaf at a time, while the engine puffed and labored in a pitiful manner. Our first thought was that the box must be out of shape, we had visions of dull knives, cutting perhaps 3-8 of an inch from a duller mouthpiece, but upon inquiring learned that the knives were sharp and set "up close." When the load was through we asked the outfit stopped. Not liking the peculiar bang of the exhaust we suspected late opening of the exhaust valves and upon inspection found the tappet rods to have over an eighth of an inch of play. This meant late valves and insufficient clearance or valve opening space to allow good scavenging (clearing out of burnt gases). This engine had been run for three season, had often been visited by an expert who we knew personally to be a good man, but he never took up the tappets. He did not realize the importance of exact timing We adjusted the tappets, did not another thing but that to either engine or cutter, then we fed the cutter for three loads of corn. We cut no bands and lapped the sheaves "heads on bands", meanwhile keeping an eye and an ear on the engine. Talk about power! we had "power to burn," all because we opened our exhaust valves on time, opened them far enough and held them open long enough. There is no doubt

but that this engine's power was increased by at least 40 per cent.

Valve-Timing.

Valve timing can be best remembered by the use of the valve timing diagram shown in Fig II. While the four-strokes of the four-cycle operation are divided approximately evenly among the four events mentioned above, it will be seen that the division is not quite "share and share alike." The intake stroke has more than one stroke to its purposes; the compression stroke has barely a whole stroke, the power stroke is only from 3-4 to 7-8 over when the exhaust valve opens and remains open through almost a stroke and a quarter.

Fig. II shows over "1" and "2" the two dead-centre positions of crank and piston. Over "3" the piston is shown on the power stroke with the point at which the exhaust valve opens marked by the position of the crank in its relation with crank-end dead centre position. The exhaust valve must open from 35 degrees to 40 degrees before the crank reaches crank end dead centre on the "power-stroke." Then, following the rotation of the crank over figure "4", we find the exhaust valve closes just after the crank has passed head-end dead-centre by from 5 degrees to 10 degrees. The inlet valve opens just after the exhaust closes, the division beyond the two operations being about one degree and almost imperceptible. Over figure "5" the inlet is shown to close from 20 degrees to 50 degrees passed crank-end dead-centre on the compression stroke.

These irregularities will bear a little discussion. It will be noticed that the exhaust valve is held open for a very long period. The purpose of course is to allow sufficient time for the burnt gases to be thoroughly cleaned out of the cylinder. It has been found very necessary to do this to clear the cylinder of back pressure at the beginning of the next stroke which is the intake. The story of the tractor on the silage-cutter shows this very well. The diagram showing valve timing shows the principle clearly and is easily understood when studied.

The terms "Exhaust Opens" and "Inlet Opens" etc., shown in Fig. II mean that the valve is supposed to be just leaving its seat or opening while the crank passes the position indicated on the diagram.

Fig. III shows what is meant by the terms "opening" and "closing" of valves. As the cam turns it pushes the tappet or valve-lifter up, this raises the valve off its seat against the pressure of the valve spring. It is not necessary in practice to see the cams shown in Fig III. There is always a very slight play between the tappet and the valve-stem. By having someone slowly turning the engine the value to be tested for timing is grasped between

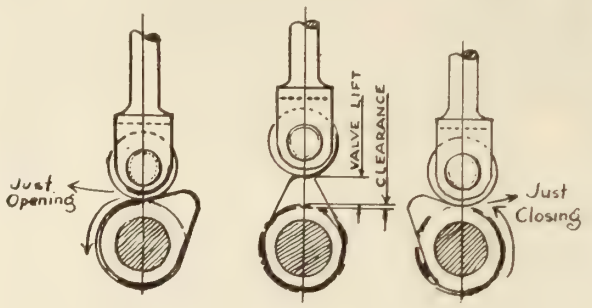


Fig. 3

thumb and finger at the point where the tappet or rod applies pressure to the valve proper. As soon as the valve stirs off its seat, or as soon as the pressure of the tappet is felt on the valve-stem, stop and mark the position of the crank. A little practise makes this easy.

Timing Marks on The Fly-Wheel

Sometimes the flywheel of a motor is marked with marks showing the position of the flywheel when the different valves are supposed to open and close. These are a good guide and when they are present should be referred to when the timing is to be looked into. The interpretation usually given such marks are as follows:

A mark across the face of the flywheel with the letters D. C. 1. 4, means cylinders Nos 1 and 4 are on dead centre, likely head-end deadcentre, then an inch or two away from this will be found I. O. 1. meaning inlet opens on cylinder No.1. There may or may not be a mark I.V. 1 meaning inlet closes on No. 1. Then there is a mark E.O. No. 1, meaning, exhaust opens on No. 1. and this is possibly the most important mark of all. E. C. 1 means exhaust closes on No. 1, this, as we stated before, is at practically the same mark as that showing the opening of the intake valve and is sometimes stamped over the same mark.

When marks on the flywheel are employed there is always a mark on the cylinder block or a pointer over the flywheel known as a "trammel point." It is opposite to this line or point that the flywheel marks must be just as the valves open or close.

These are practical details in valve-timing and when followed out will take care of any checking of the timing or any actual timing which a service man may be called upon to perform.

Do Not Time Valves by Piston Position.

Some men advocate valve timing by the position of the piston instead of by crank position. By turning an engine back and forward over either dead centre it will be noticed that while the piston is in this position the crank can be turned back and forward through an arc of about 20 degrees without changing the position of the piston. This means the position of the piston is not a definite guide to valve timing. Valve timing done by piston position is not accurate enough; valve openings and closings must be measured by degrees of crank rotation; not by jumps and guessesof 15 to 25 degrees.

Don't Let the Grass Grow Under Your Feet

Step On the Gas. No Time For Pessimism, the World Is Out of the Woods. The Next Few Years Present Great Opportunities For the Dealer In Farm Implements

By R. S. WILLIAMS

TO THE average retail implement dealer this year of our Lord 1921 has been very much like a wallop in the stomach. It has witnessed cancellations of orders, price reductions and general depression. In fact it has witnessed a little of everything except good business. The farming public has been on a buying strike and didn't care who knew it. Sharp declines in the prices of farm products brought pessimism and in many cases antagonism, and it is small wonder that the average implement dealer became discouraged to the point where he was tempted to lie down and quit.

It is no time for that, however, The world is out of the woods, and while the diplomats are struggling with the Irish question, the Russian situation, and the Bolsheviki, let us once more get our feet on the ground and having fully decided what we wish to accomplish, hasten toward its accomplishment with all possible speed and the least lost motion.

The next few years present unlimited possibilities for the wise implement dealer, but like all promising undertakings, it will require a certain amount of foresight in dealing with the problems that will inevitably arise. It will be not so much a time for retrenchment but as a time for good generalship and close attention to the details of business that hitherto have been neglected. It is said that the man who can see no farther than the present is mentally blind, but the man who can look and plan ahead is a general. Every man can be a general if he tries. There is a great difference between thinking and just thinking we are thinking.

The implement dealer who survives will be the man best able to take care of his trade, not only in the matter of supplying machines but also in the matter of giving quick and effective service to his trade. This service need not be of the "free variety"—a brand that is rapidly passing out of existence—but a service designed to keep every purchaser satisfied—and his machines constantly at work.

Tractor Farming the Most Absorbing Topic

The country is rapidly going over to the tractor because it is the best solution of the farm power problem. The last year or two have seen great strides in this infant industry and the class of men who will not accept the theory of tractor farming is fast becoming extinct. It is now a question of selecting the type best adapted to each man's individual requirements and the questionof first cost. This last, however, is more apparent than real because nearly every farmer is in fairly good financial conditions and with the harvest of a big crop the return of confidence is almost sure.

It is not to be denied that there will be a host of tractors sold during the next four or five years, and the dealer who selects his tractor with care, keeping in mind his constituents, the topography of her territory, and the work to be done, and then equips himself to give prompt, efficient service at all times, will realize handsomely during the transition from horse power to tractor that is bound to occur on the farms of Canada.

The best estimates show 10,000 tractors sold and in the hands of the farmers. Due to the business depression of the current year many manufacturers have been left with augmented material supplies, equipment and working forces. Many of these concerns will turn their energies to tractors, so that 1922 will certainly see a considerable expansion in the tractor industry, due to the reasons assigned and, later, to the increased demand. A number of big manufacturers in the States who have never paid any attention to the implement business have now taken on the manufacture of a line of tractors. Some of these people are big automobile men, and with the financial backing and good reputation they already possess, they will help to swell the available supply of really practical tractors. Their products will be worthy or unworthy as they gather around them men who are competent to design, build and market a tractor that will give satisfaction to the class of people who will buy it.

In addition to the manufacturers who are equipped to make and market a successful tractor, there is a constantly changing personnel of manufacturers who are trying to break into what they believe is an easy and profitable business. They range from the small manufacturer sincere but financially unable to swing so large a project) to the promoter who floats a company merely to sell stock and with no real intention of building up a countrywide organization. These abortive attempts will not help the tractor industry. They will not kill it, because the demand for practical tractors marketed and backed by reputable concerns will outweight whatever ill effects obtain from the launching of incorrect design. We occasionally hear it said that the ultimate tractor has not yet arrived. This is quite likely the truth. On the other hand, it is no argument against buying tractors. The same thing might justifiably be said of the automobile—yet automobiles are being sold daily for business and pleasure and the purchasers are so well paid for their investments that they repurchase when their cars are worn out. Although there will certainly be marked improvements made and incorporated in tractor design, the farmer who is confronted with power problems and rising operative costs cannot afford to wait. He can make so much profit from a carefully made tractor investment that the fact that his tractor may not represent perfection is not of sufficient importance to be considered. The principal thing is to pick out the type most suitable and then use it for every farm task. Here is where the real tractor dealer can help.

Learn to Inspire

Nearly every tractor purchaser is a new one. Replacements are not yet common. The thing that impels a man to invest in a tractor is his decision that horses are slow, expensive, and inefficient. He finally decides that the substitution of a tractor will remedy the situation. This, then, is the point the tractor dealer must study most in selling tractors. First, show the prospect what the tractor will do. Spend more time proving to the man that the tractor will save him money than in convincing him of the high carbon steel of the crankshaft. Demonstrate by means of actual figures just how the tractor is going to take the place of horses—do more work in less time at less cost. Learn to explain clearly the difference between horse farming and tractor farming, and learn to show the farmer how he can make the switch with the least disorganization. It will require some study to learn to be a "farm traffic expert" as it were, but the game is well worth the candle. There is so much at stake that any effort made is repaid a hundred times.

The Real Tractor Dealer

The tractor dealer who expects to become a predominating factor in the trade of his community must know not only the tractor he is selling but he must be able to help the farmer in a comprehensive, practical manner to rearrange his farm work on a tractor basis. To do this, he will need to know each farm machine that will be used in conjunction with the tractor. He must know when such machines are doing the best work. A tractor dealer should spend a great deal of time in the field watching the trac-

tor at work with plows, disks, drills, harrows, spreaders, hay machines, binders, and other tools that can be used effectively with tractor power. There are two distinct benefits that depend upon his being an expert along these lines. First, only by possessing this superior knowledge can he get his fair share of the business that is surely going to come from his territory; second, by selling his tractor correctly, he not only insures its staying sold but establishes himself as a thorough tractor expert—one whose word is taken as final on all subjects pertaining to tractors.

Demonstrations Pay

Until the farmers of this country become thoroughly conversant with tractors and the work they will do, demonstrations put on properly will continue to be a paying investment. The day of the immense tractor demonstration nationally advertised and attracting hundreds of thousands of people is probably past. We are told that it is. But that is due to the fact that the national demonstration is in effect competition or contest. The demonstration that really pays is the small private one given by the dealer to a select audience of actual prospects. Such a demonstration should be given not so much to see the tractor move across the field as to show these farmers the amount and variety of farm tasks that can be accomplished by mechanical power with less effort, with less cost, and in considerably less time.

Quick, Mechanical Service Important

Sometimes the best tractor breaks down—a bearing fails to get oil and burns out or a spark plug breaks and there is nothing at hand to replace it. This invariably happens in the midst of the biggest rush job of the season. It is at such times that the tractor dealer can make his service of real cash value assistance by stepping into the breach with all possible speed. The good tractor dealer should have an automobile or motor truck fitted up with a miniature machine shop. All common parts—bearings, plugs, wiring, etc—should be part of the equipment. A complete set of good tools of every description should be carried. Some dealers even put in a lathe and forge run by the truck motor. It makes a portable machine shop that will carry aid to the stricken tractor with all possible speed. By being able to come to the rescue quickly in this way, the farmer's work is held up only a fraction of the time that would be required if he were compelled to wait for a factory expert under the old method. Not only that, but it gives the farmer confidence. He is not so afraid to sell his horses if he knows that a tractor breakdown will not hold him up long.

This service should not in any case be free service. There is no such thing as free service and the tendency of implement manufacturers and progressive dealers is to eliminate entirely all so-called free service. The tractor owner will be willing to pay a fair price for repairs and expert service if such work is rendered promptly and efficiently. With a full complement of tools, a complete stock of repair parts in charge of a man who is competent to do expert work, a dealer can soon work up a lucrative business that not only will pay a good profit but will keep tractor owners better satisfied, thereby building up an ever increasing tractor trade. Satisfied customers spread good reports and the voice of a satisfied customer is worth hours of sales argument.

Don't Forget the Smaller Lines

In the hustle for tractor orders and the sales of big machines, don't forget the smaller tools that really form the bread and butter part of the business. So many dealers are apt to neglect the tillage tools—disk harrows, peg-tooth harrows, etc. When one stops to think abou it, he sees that without the seed-bed making machinery, the farmer could not raise the crops that will enable him to buy a tractor. Whereas there are perhaps 30 or 40 tractor prospects in a dealer's territory, there are without doubt a couple of hundred disk harrow, peg-tooth harrow or cultivator prospects. These tools will be sold—they require very little sales argument and practically no follow-up expense. The total profit on a season's tillage sales rolls up a nice volume and one which can be increased by a little comprehensive effort. Farmers will buy the minor tools of the best-known man; therefore, it behooves the dealer to see to it that every man in his community knows him and knows the line that he sells. Local advertising helps—direct mailing helps—and nothing helps more than bright, shiny samples set up and kept in smooth working order.

Study your business. If your business isn't worth studying it isn't worth anything. So much can be accomplished by careful attention to detail that no stone should be left unturned to build up a bigger and better satisfied trade.

The Horse Association at it Again

THE following letter from the International Harvester Co we deem of sufficient importance to the dealers in power farming to publish it in its entirety:

In July we received a letter from the Horse Association of America, written by Wayne Dinsmore, describing his trip through Canada. This letter was so widely quoted in the press of the states and the information it contained was to our belief so erroneous that we told Mr. Dinsmore that we took exception to his statements, and would disprove them if possible.

We quote from Mr. Dinsmore's letter:

"I have just returned from a trip though the Canadian North-west, where, at Calgary, July 5, I addressed a group of leading bankers, business men, farmers, ranchers and railroad men who attended a dinner as the guests of George Lane, owner of the world famous BAR U Ranch.

"While in Canada I travelled 1697 miles by rail, chiefly in the daytime, and 325 miles by auto. Agricultural conditions, equipment and crops were closely studied. Summer-fallowing was in full swing, but all outfits seen in fields were horse-drawn except 16. Estimates and reports from many reliable sources indicate that out of each 100 oil or gas tractors in these provinces not more than 5 have been used in field work so far, and it is not likely that more than five per cent will be used in field work this year.

"Inasmuch as over $42,000,000 is invested in oil and gas tractors in Manitoba, Saskatchewan and Alberta, this means that 95%, or more than $40,000,000, is tied up in the tractors standing idle! The interest alone at 8% is $3,200,000 on this sum, and on a five year life basis, $8,000,000 annually disappears in rust. Rich as these prairie provinces are, they feel the drain. H. A. Craig, Deputy Minister of Agriculture for Alberta, said 'Eighty per cent of the farmers in Alberta who have tractors regret their investment.'"

According to Mr. Dinsmore, his information was obtained from what he saw out of a car window and in a short automobile trip. Undoubtedly he had to rely upon those with whom he talked for much of this information, and we are inclined to believe that many of these parties had no means whatever of checking up actual conditions and probably were not posted on the general situation.

Questionnaire Sent Out By I. H. C.

Immediately upon receipt of Mr. Dinsmore's information we sent a questionnaire to every Canadian tractor owner whose name we had in our files—some 5,000. These are the questions we asked:

Did you use your tractor this year?
For what kind of work?
How many acres were covered?
Will you use it again this year?
For what?
Give approximately the yearly repair expense on your tractor.
What do you figure is the life of a tractor in years?
If you have not used your tractor this year, will you please state why?
Remarks:

Of those who replied, more than 85 per cent stated that they have used their tractors this year. Of 12 per cent who said "No" not one had any fundamental fault to find with the tractor nor did anyone mention that he considered the tractor a losing investment. The reasons for not using the tractor were almost universally "High prices of oil," "Low prices of horses and feed." Of those answering "No" fully one-half said they would use their tractors later in the year. Of those who used their tractors this year, 93 per cent listed field work—plowing, disking and brush breaking—as the work done. The yearly repair expense varied from $5 to $50, averaging $15. The average life of the tractor was stated to be ten years.

These very favorable reports are made, please remember, in an exceptional year. Many of the provinces had a large oat crop which could not be marketed at a fair price, hence feed was cheap. Horses were plentiful, cheap, and with no market for the surplus. Money was scarce on account of the drop in price, and the banks tightened up to a considerable extent. Fuels were high priced. Many farmers used horses not because they preferred to, but because they had the oats and the horses which they could not sell, and to avoid an outlay for fuel and oil for a tractor. Perhaps not as many as ordinarily used their tractors for spring work, but a much larger per cent used them for summer fallowing. As soon as farmers get the money out of their crop you will see practically **all** tractors at work, not only because farmers can get the work done more economically with tractors but because in a short season the work must be accomplished quickly. All facts considered, we believe the investigation showing that 85 per cent of the tractors have been used this year is about the most favorable evidence for the farm tractor that has yet been uncovered.

In circulating this Canadian information in the States, the Horse Association knew that the average States farmer or publisher had no means of checking it up. We personally believe a rank injustice has been done the business judgment of the Canadian farmer. It is incomprehensible that Manitoba, Saskatchewan and Alberta would, as Mr. Dinsmore says, invest $42,000,000 in gas tractors and allow $40,000,000 of this investment to stand idle.

(Continued on page 18)

The Western Canadian Farmer Faced With a Serious Problem Saw The Solution In The Tractor

Hank Smith Goes After Winter Business

By D. Dickenson

"WHAT seems to be the trouble Doc.?

The doctor looked at my wife, then at me; hesitated a moment and said, "Bill to be honest I don't know. You got a fever, so high in fact you might be seeing things soon, but apart from that there's not a darn thing the matter with you. Seeing it's getting on to the colder weather I'd advise you to stay in bed till the fever goes." And with this encouraging (?) information he departed.

The wife and I then started a good natured scrap. Naturally I didn't see any sense in staying in bed when even the doctor refused to commit himself, but it was really the postman who settled the argument. When I opened up the letter the wife brought in from the door my power of speech suddenly dwindled, for there in front of me was a neat announcement printed on lovely cardboard, from Hank Smith, one of our local garage men. It merely stated that on the 15th, gosh, that was to-morrow night, he would hold a "Get Together Meeting," and was hoping to see me there.

"A Get Together Night" what on earth was that? I suddenly realized my wife was still arguing about my staying in bed. "All right dear," I said meekly "I'll stay in bed." You bet I'd stay in bed, for I had decided to puzzle this new and strange announcement at all costs.

Darn it all, the card was so simple it was aggravating. It simply said:—

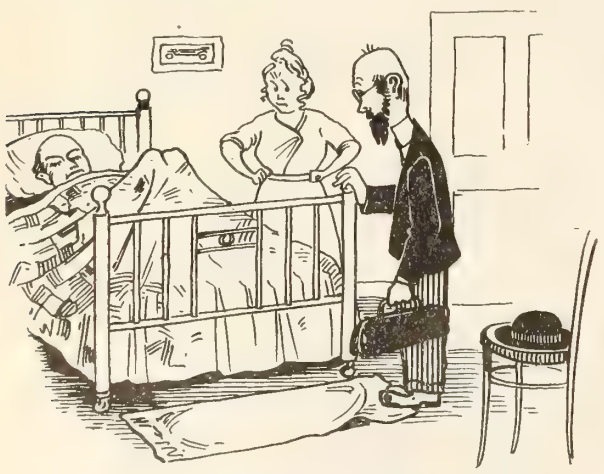
Dear Bill:—

It's coming on to the cold days and evenings now, so I've decided to hold some "Get Together Meetings" this winter, the first of which will start on the 15th. at 8 o'clock. Be on hand as there will be some smokes and drinks, and to make things nice for all concerned, come on time. Looking forward to seeing you and having a chat with you.

I am as ever

Hank Smith

It had me guessing all right, but I had my mind made up on one thing, and that was, fever or no fever, I was going to that meeting. If Hank Smith was giving away free smokes and drinks,—well he had something up his sleeve and I intended being there at the Show-down.



It wasn't far to Hank's garage, but when I got there I received the shock of my life. Over 60 had assembled there, all drawn no doubt by the uncertainty of the announcement, or perhaps by the chance of a free drink and smoke. In any case I knew most of those there, and after howdying to a few, I squatted on one of the chairs, which by the way had been arranged in a circle just as if we were going to hold a spiritualistic meeting or something.

Hank was very much on the job shaking hands with everybody and making them acquainted all round. Promptly at 8 o'clock he said, "Well boys, let's start. Fetch out the smokes, Sam." This latter was directed at Sam Fisher, one of the help at Hank's garage.

Soon the cigars were going nicely—and they were good ones too—when suddenly Hank remarked "Well boys, I guess you're all wondering what the big idea is—eh?"

Hank's Plan

The vigorous nods were sufficient answer, so he continued: "You see I figured it out like this—Winter's coming on and everybody getting ready to lay up their cars for the season. About the same time that happens, garage men are getting ready to lay off a few hands until things pick up in the spring, and so it goes. I've done that now for five seasons, but I don't intend doing it this winter. Instead I mean to make this winter the best I've ever had. That's why I started the meeting—to show you I mean business."

He paused a second, then continued: "You know boys, when all's said and done, this laying up of cars for the winter is all a lot of bunkum. Why should you stop using your cars because it's cold? You can make even an open car comfortable in the winter if you try. There are lots of winter tops to be bought that slip over the regular open style body in a jiffy, and there are lots of car heaters on the market. The water in the radiator need cause you no concern for anti-freezing solution will solve that difficulty, and so it goes. There's a solution for every excuse. Just because it's the usual thing, you lay up your car, suffer the inconvenience, just because you've made up your mind that winter is not suitable weather to drive a car."

"Of course I've got my own selfish viewpoint," he continued, "I want to keep your business all year round instead of just a short season, but on the other hand it works both ways, for we both benefit."

"There's something to what you say, Hank," muttered Si. Reid.

"Sure there is" followed up Hank, "and what's more the roads are not half as bad as they are pictured. Look at the doctors, and other professional men who MUST drive their cars. They get home all right, don't they?

"But isn't winter driving hard on a car, Hank?" asked Jack Tatt the barber.

"Hard nothing. It's a little tougher than in the summer season as far as traction is concerned, but what are chains for anyway. Besides a whole lot depends on the way you drive your car. With proper care you have no trouble. To show you I am in earnest, here is my proposition. Every man who stores his car in this garage and USES it this winter pays me only half the regular rate. If he decides to let her stay up on the jacks, well that's his own business."

"I can't reduce the price of gasoline or oil," he continued, "but I can offer you a special rate on repair work. Every man who runs his car all winter gets his overhauling done at a 20% reduction. This concession should do away with any grumbling about the winter being hard on cars" he concluded.

"Sounds mighty fair," I said.

"Sure it's fair," shot back Hank, "that's what I'm trying to do, and what's more, I'm going to keep everybody posted regarding the true condition of the roads leading out of this town. All you'll have to do will be to drive up and read the report which will be tacked up just inside the garage door."

"Bring the drinks in, Sam," said Hank suddenly. The sudden change in the conversation was just what we needed for soon our tongues were going for to beat twelve of a kind.

"And now, boys," said Hank after about 5 minutes had passed, "let's see what I meant by our get together meetings. You know—motoring is a funny business. No matter how much you know you're always learning something new. It's experience that counts, but yet one man gets different experiences from another, and so it goes. What one knows, the other never heard of—so I thought it out this way."

"If the boys all get together, say once a week, or even every two weeks and swap experiences, we'll all be better for it in the end, and besides we'll get better acquainted. We"ll make it a free and easy affair just like this, and to make it enjoyable, I'll supply the smokes and liquid refreshments."

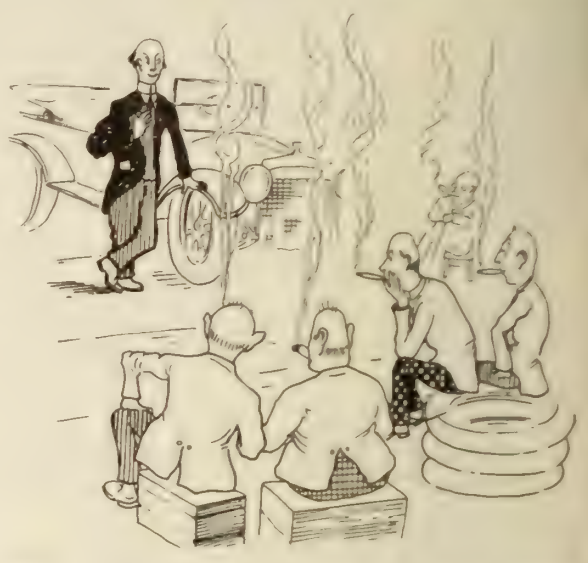
"Sounds good to me," commented Larry Doyle, one of our Irish building contractors.

"That's how it hits me too," continued Hank. "What do you say boys? Let's decide to make this an all round year. We can do it—in fact ought to do it; business will be better all round. How about it?"

"I'm with you Hank old boy" I said.

"Me too" chimed in Si. and soon all were of the same mind.

"Now regarding the swapping of experiences and hints," said Hank, "I'll start the ball a'rolling. Now first of all I intend sending you a little card with a hint or idea on it every week. I want you to keep them, for in the spring I'm going to give everyone who saves them a special book to keep them in.



What's more all ideas reported at these meetings during the winter will be copied out in these books. I've made arrangements to have the different stunts printed and pasted in this book, so it will be worth having, but now let's see what we should know before we start in on winter driving.

"Perhaps the most important thing of all next to your engine is your tires. Remember that the hard work and hot roads this summer have no doubt been hard on your tires. Look them over carefully for it will pay you in the end. As a rule tires get rather cut up, and its the little cuts that have to be watched. If this is neglected, dirt and water get in, rot the fabric, and of course a weak spot develops causing a blow out. Plugging up such holes doesn't take long, costs very little, and saves a whole lot at the end. To my mind, boys, there is no greater comfort than the knowledge that your tires are in good condition.

Watch the Engine

"If you've got any knocks or looseness in the engine now is the time to fix them before you start the winter. Don't think this line of talk is all selfish, for it's not all to get work from you. If you feel you can get better service from some one else, go to it, and my former offer of half price storage still holds good."

"Sly old Hank," thought I, for I knew there wasn't a finer garage in town.

"How about the batteries, Hank. Will they freeze easily?" asked Si Reid.

"Not if you keep them properly charged" said Hank, "and that doesn't cost much. It will take a mighty cold day to hurt them if they're up to strength."

"What oil would you recommend for winter?" asked someone else.

"A lighter oil by all means," said Hank, "and what's more keep a little more air in your tires. Remember that tires don't expand as much in cold weather. Another thing, some people run away with the idea that winter tops run into a lot of money."

"What could I get one for, Hank?" I asked.

"What's that you said?" asked my wife.

"Eh—er——I—er—" I replied dazedly.

"I said what's that you're raving about?" repeated my wife.

I grinned foolishly, for I suddenly realized I had been dreaming. I looked around and noticed that I hadn't even left my bed. "Never mind, wifey," I said sort of dazed, but I couldn't help thinking that the dream contained a germ of a darn good idea, and that it was too bad that Hank, and a whole lot of other Hank's all over the country hadn't thought of it.

Sell the Farmer "Power Farming"

By GEO. E. FULLER, Manager
Power Farming Bureau, Chicago

AT the Fargo farming demonstration there was a good deal of talk about power farming. Salesmen dwelt on it. Visitors discussed it. It was on everybody's tongue. But when you got right down to cases, they were talking "Tractor Farming"—not "Power Farming"—and there's all the difference in the world.

For "Power Farming" is a state of mind in which the effort is made to translate farm labor into terms of power machinery. This mental effort to think in terms of mechanical-power instead of horse-power and man-power often results in the purchase of an automobile, farm lighting plant, milking machine, sprayer, stationary gas engine, or other small, low-priced pieces of farm power machinery before the tractor is purchased.

This first purchase of power machinery is the opening wedge that pries the farmer's thought open to the possibilities of mechanical power in other farm operations.

A milking machine is often the dairy farmer's first power purchase—and when he discovers that it takes the place of one hired man, he begins to increase his herd and his ensilage, and needs power equipment to fill the silo, cut the ensilage, etc. Perhaps his next step is to increase his acreage necessary to supply his increased herd. Then he is half "sold" on tractor farming, because he is already thinking in terms of power farming as applied to the dairy.

The lighting plant, too, makes many friends for power farming, especially because farming is the business of the whole family. Any piece of machinery like a lighting plant that appeals to the whole family makes it easier to sell other power machinery on that same farm.

The trouble is that too many dealers and salesmen do not recognize the kindred interest between the lighting plant and the tractor, the gas engine and the milking machine and they think only in terms of their particular machinery. Sales resistance for a tractor is often overcome at a single stroke by reminding the farmer of his success with some other piece of power machinery. Where would a farmer be without his "flivver," or his lighting plant, or his gas engine to pump water and do odd jobs?

Dealers and salesmen should not overlook such opportunities for driving home the idea of success with power machinery, which almost every farmer has experienced through the use of one or another power machine, and the success of any one of these machines makes it easier to sell any other of these machines. The sum total of all power machines is what makes a power farmer. A farmer is not a power farmer until he is "sold" on the idea of using mechanical power wherever possible.

Farmers Have Not Yet Got the Vision

Too many farmers have bought tractors without getting any vision of "Power Farming." They had some particular job to do in a hurry which the tractor was obviously capable of doing. They had the money or credit to buy the tractor, and they made the purchase without a thorough sight of its possibilities, or a thorough understanding of how to make the tractor perform the many jobs it is capable of.

Being only "half sold" as they were when they made purchase of the tractor, they did not attempt to apply the tractor to many farm operations for which it is well adapted. As a result, you often find tractors laid up when they should be working. You find that tractors were purchased without selling any horses—an economic mistake. You find tractors whose owners have never thought of custom belt work. Not one out of a thousand tractor owners is getting anywhere near 100 per cent out of his tractor investment, because he is not thinking in terms of tractor power. He is still thinking in horse power and man power.

On a recent trip, I saw farmers working out their road tax with horses, while the tractor was standing idle. The big idea behind "Power Farming" is to get the farmer to think in terms of machinery which will reduce horse-power and man-power expense, and give the farmer and his family more time and opportunity for the good things in life. So no salesman of farm power machinery can afford to knock any other form of farm power—and close cooperation should exist between dealers selling all forms of farm power machinery in the community.

Where a salesman finds that any piece of power machinery is out of commission, he should be just as much interested in seeing that it is repaired and put in operation as if it was his own. He must be a booster for "Power Farming"—and if he sells this one big idea to the farmer by boosting every form of power machinery, it follows just as surely as day follows night that the salesman's particular form of power machinery will find a place on that power farm just as soon as it is needed.

And don't forget, *it's needed right now*!

HOLD DEALERS' CONVENTION

THE DOMINION Steel Products Company, Limited, of Brantford, manufacturers of Dominion Light electric lighting plant, held a convention of their Ontario dealers at their main office in Brantford, Monday, August 22nd. Between forty and fifty dealers from all parts of the province were in attendance.

The programme included general inspection of the factory, and a detailed discussion of the lighting plant. Luncheon was served at the Brantford Country Club.

W. P. Kellett, President and General Manager told of the history of the company and of the quality idea that dominates every article manufactured.

H. K. Jordan, Manager of Sales, outlined the company's sales policy. According to Mr. Jordan, sales have been very gratifying in certain sections of the country and inquiries and interest indicate a marked increase in business during the next few months.

The construction of Dominion Light was thoroughly explained by Geo. Paddock, chief engineer and by John Hawes, chief inspector of the lighting plant department. A demonstration of assembling and installing was given, after which each dealer was given further instructions on service.

The convention was 100 per cent. satisfactory and the dealers returned to their districts fully enthused over prospects for a greatly increased business this fall.

CORRECT TOOLS NEEDED FOR QUICK REPAIRS

EVERY repair job that has to be done on a tractor during the working season ought to be considered an emergency repair. The repair work should not be done in a makeshift way simply because it has to be done in a hurry. The idea is that the work should be done as well as possible in as short a time as possible, so there will be the least immediate delay with assurance of a job that will hold for the future.

For this reason a good supply of repair tools are necessary. The tools should not be makeshift tools. The standard tools which go into every repair kit such as the hammer, chisels, punches, pliers and wrenches should be of the very best quality and in case any of them are broken or lost, they should be immediately replaced. Practically every machine requires the use of a few special tools which will greatly facilitate certain repair jobs. By all means these special tools should never be missing from the kit.

Buy good tools; take good care of them and you will save time and money.

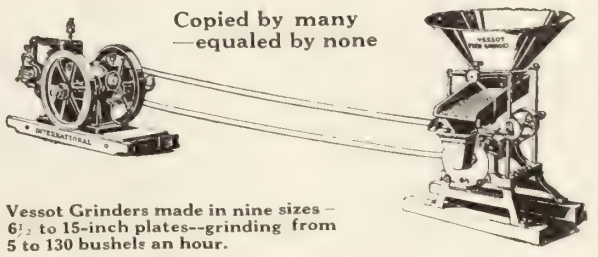
A Convincing Sales Argument

FOR THE

Vessot Feed Grinder

AND

International Kerosene Engine



Vessot Grinders made in nine sizes—6½ to 15-inch plates--grinding from 5 to 130 bushels an hour.

Wherever livestock is kept there is a market for Vessot feed grinders and International kerosene engines. Feeding experience shows that ground feed produces more economical gains in hogs and cattle than whole grains, and keeps them healthier. When whole grains are fed, large quantities pass through the animal undigested. This is waste. Ground feeds are also more satisfactory for work horses and dairy cows.

Economy alone is sufficient reason for the stock feeder to purchase a feed grinding outfit, without considering the convenience and saving in time which comes from handling ground feeds at feeding time. Call these facts to the farmer's attention in your effort to push the sale of Vessot grinders and International engines.

The Vessot Handles any Kind of Grain

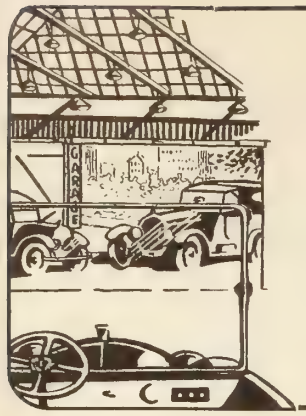
Vessot feed grinders may be adjusted to grind any kind of grain, either coarse or fine. The extra heavy plates are reversible, giving double wear from each set. Every plate and shaft is accurately balanced, insuring a smooth-running machine that will last a lifetime. All shafts and bearings are of generous size.

International Kerosene Engines Cut Power Costs

These engines operate on low-cost fuel. An enclosed crank case protects the working parts and saves oil. The oil is kept clean, so that it lubricates thoroughly, saving wear on the piston, crankshaft, and bearings. These engines are noted for their strength and long life. Sizes range from 1½ to 10 h.p. Write your branch house or see the blockman for detailed information.

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD
HAMILTON CANADA

WESTERN BRANCHES - BRANDON WINNIPEG MAN CALGARY EDMONTON LL... IRIDGE ALTA. ESTEVAN N BATTLEFORD REGINA SASKATOON YORKTON SASK
EASTERN BRANCHES — HAMILTON, LONDON OTTAWA, ONT., MONTREAL QUEBEC QUE. ST JOHN N B.



SHOP NOTES FOR THE GARAGE MAN

Hints on Aluminum Welding

The Success of Welding Aluminum Castings by the Oxy-Acetylene Process Depends to a Great Extent Upon the Skill of the Operator

ALUMINUM as a material for casting presents many advantages on the score of lightness and strength, and the enormous number of aluminum castings which are employed in automobile, and other classes of work opens up a wide field for the application of the oxy-acetylene process for the repair and alteration of such castings.

Pure aluminum is not usually employed for castings subjected to stress, owing to its comparative softness and lack of strength. In order to raise the tensile strength and increase the hardness it is usual to add small percentage of some hardening metal, such as zinc, copper, nickel, etc., the amount and nature of the added metals depending upon the physical and mechanical properties desired. There are two main classes of aluminum casting alloys: those containing zinc (either with or without the addition of small quantities of other metals) and those containing copper as their principal hardening medium. The extensive researches of the British Aluminum Company, Ltd., into the properties of aluminum alloys have enabled them to select and standardize a number of alloys. These alloys are supplied in the form of a notched ingot weighing about 6 lbs.

In the case of new castings, shrinkholes, pinholes, and other surface defects may be repaired in a very satisfactory manner with the oxy-acetylene blow-pipe, and the casting thus repaired is quite as strong and reliable as one cast perfectly. After the repaired portion is cleaned up and any excess metal removed it should be impossible to distinguish the welded part from the rest of the casting.

A suitable alloy for crank-cases consists of zinc, about 13 per cent., copper about 2½ per cent., and the remainder aluminum.

The success of welding aluminum castings by the oxy-acetylene process depends to a great extent upon the skill and intelligence of the operator. The average aluminum casting is somewhat complicated in its design, hence the necessity for skill in carrying the work through, especially during the preliminary portion. An expert in aluminum welding is distinguished by the careful preparation of the work, the arranging of supports, chills, temporary moulds, etc.; the sound judgment as to whether total or partial preheating is necessary; the choice of a correct size and well-designed blowpipe; the adjustment and maitenance of the correct proportions of oxygen and acetylene. In this connection many still recommend the use of excess acetylene in the flame in order to prevent oxidation and reduce the temperature of the flame. With well designed and a good range of blowpipes this is not necessary. It is essential that the oxygen and acetylene should be very pure; aluminum absorbs nitrogen if present as an impurity in the oxygen and other gases and the presence of these will render the welds porous, brittle and unreliable. Dexterity in manipulation the flame so as to avoid deformation and rapidity and ease of operation are essential if overheated and damaged welds are to be avoided.

A first-class aluminum flux is a great advantage and the operator should exercise care in selecting a flux of known merit. The welding rod should be of practically the same composition as the casting. Pure rod should not be used and for crank-case repairs rods of about half inch diameter, which are difficult to obtain, are a distinct advantage. The rods in common use at the present time are usually too short and too small in diameter. Since aluminum alloys have a low melting point, high conductivity for heat, and become fragile previous to fusion, preheating and cooling must be carried out very carefully.

The use of a flux on aluminum castings has been abandoned by many welders. In place of it they break down and remove the oxide by means of an iron rod which is also used to smooth off the surface of the weld after it is completed, but as already stated, the use of a good flux is advantageous.

There are many repairs on aluminum crank-cases which can be done without preheating and others which can be carried out by more or less inexperienced operators. No matter how badly damaged a case may be, a repair by the oxy-acetylene process will generally prove a paying proposition.

Preventing the Excessive Lubrication of the First Two Cylinders on Ford Cars

By FRANK CHALMERS in Automobile Dealer and Repairer

IN this article I will try to give a remedy for all Ford oiling troubles, and particularly for those troubles arising from over-lubrication of the first two cylinders.

One couldn't ask for a more simple system of lubrication than that used on the Ford car. The designer of the car evidently believed that the more things a part could be used for, the better. The fly wheel of the Ford car does many duties besides acting as a balance wheel for the engine. It forms a part of the clutch, it functions as a part of the gear-set, it is the main part of the magneto, and lastly, fulfills the function which is the subject of our story, it is the main unit of the oiling system. The flywheel on this car acts as a large centrifugal pump for forcing the oil into the reciprocating and moving parts of the engine and transmission.

Operation of Present System

When the engine is operating, the flywheel picks up a large volume of oil from the bottom of its housing and by centrifugal force throws it upward and around the top of the housing. At the right side of the housing, as one sits in the seat of the car, is an oil tube, bellod out to a funnel shape and this funnel catches the oil as it is thrown off from the flywheel. The oil tube carries the lubricant to the front of the engine and pours it over the timing gears.

From the timing gears the oil flows into the first splash pan and the first connecting rod sprays it around at the front of the engine. The surplus oil flows to the second splash pan where it receives the same treatment; then to the third and finally back to the flywheel housing again to begin the cycle. The first cylinder is usually over-lubricated; the second often is over-lubricated; the third is about right and the fourth is in the same class.

It has been said that if piston rings and pistons are properly fitted, then it makes no difference whether the lower portions of the cylinders are over-lubricated or not and doubtless the statement is true, but that does not comfort the man who does not have the time or the money to refit pistons and rings every few months. Nor does it help the man who owns an engine with scored cylinders.

In many Ford cars the flow of oil to the first two splash pans is so great that the first two cylinders will carbonize even though the greatest care is given in fitting the rings.

If the oiling system is in good condition over-lubrication is bound to result but many Ford owners are troubled with conditions exactly the reverse; under lubrication. The reason for this is the clogging up of the oil tube by dirt and pieces of lint from the brake bands.

If the oil tube is choked with dirt of foreign matter, then you can hardly expect the system to work, no matter whether it is remodeled or not. For this reason, before making any alterations in the system clean the engine thoroughly. Since the engine must be dismantled to make the change, which will be hereafter suggested, you will have ample chance to make the cleaning thorough. If the brake bands show a tendency to fray on the sides, throw them away and install a set of bands which will not ravel or fray at the sides. The best is none too good. You can't expect first class results from third rate stuff and a few extra cents added to the cost of the brake linings in the transmission may ave many dollars in engine repairs.

The size of the oil tube is ¼ inch and this ¼ inch hole is ample to supply all the oil for the timing gears and splash pans if properly distributed. The only trouble, as we have seen, with the present system, is that it is not properly distributed.

Exposing the Oil Tube Funnel

Dismantle the engine to the extent of removing the timing gear case cover, the oil pans and the cover of the transmission. By the cover of the transmission I refer to the whole of the upper part of the transmission housing. If this is done, then the oil tube funnel is exposed, and the cleaning of the oil system as well as the base of the engine is made possible.

Drain off all of the old oil and use about two gallons of fresh kerosene oil to clean the under part of the engine and the transmission. Spray the kerosene all over the working parts, through the oil tube and wash down the flywheel with it. If you place a tin vessel below to catch the kerosene as it leaks out you can use the kerosene as it leaks out you can use the kerosene again but be sure to strain it through a fine cloth before you use it the second time. A good, tight oil or grease gun with a fine nozzle is just the thing for squirting the oil into the engine. Clean the engine thoroughly with the oil! I repeat this statement because it is vitally important.

After you are sure that the engine is clean, mark the oil tube, which you can see from the bottom, running along just below the cam-shaft, with three tiny punch marks. These punch marks should be opposite to the big ends of the first three connecting rods.

Boring the Oil Tube

With a newly sharpened twist drill, 1/8th of an inch size bore the three holes into the oil tube as indicated by the punch marks. The slant of the drill should be such that the hole will point toward the lower end of the connecting rod when that member is at its lowest point. By this means an even distribution of oil is assured to each oil pan. (The fourth pan, you will note is a part of the flywheel housing and will need no oil hole in the oil tube).

The next thing to do is to fit a plug into the end of the oil tube where it opens to the timing gear housing. For this purpose use a piece of brass and fit it carefully so that it will not fall out of place and into the gears and so make a wreck of the engine. Before driving this plug into place bore a hole into it. This hole should be 9/64 of an inch in diameter.

The total area of the four tubes, if these directions have been followed, will be slightly greater than the area of the ¼ inch oil tube which may mean that the timing gears will get a slightly large proportion of oil, however this is an error in the right direction.

After all of the holes have been bored and the plug is ready to be driven

Continued on page 20

AMES HOLDEN

"Grey Sox" and "Red Sox Tubes"

add to the mileage given by "Auto-Shoes"

"AUTO-SHOES"

Mean Mileage That Costs Less

AHM System

WHY "AUTO-SHOES"

Every casing is called a "tire." It is a word that conveys nothing about the character of a casing—its performance, value, reliability or origin. All casings, good or bad, have an equal right to be called "tires."

Which furnishes the best reason in the world why exceptionally good casings should have a distinctive name — a name that lifts them out of the rut—that implies superiority and character definitely—that identifies them immediately.

Reasoning that dictated the adoption of the name Ames Holden "Auto-Shoes"—based on the knowledge that Ames Holden "Auto-Shoes" are worthy of the distinction—that they will deliver more mileage—serve with absolute reliability and consistently give greater value for cost.

To add emphasis to our belief in the superiority of Ames Holden "Auto-Shoes" we back them with a guarantee that insures them to you against any defect in material or workmanship that might possibly show up at any time in the life of an Ames Holden "Auto-Shoe."

You buy on this guarantee—we adjust on this guarantee without quibble or red tape. Fit a set and put it squarely up to us.

AMES HOLDEN "AUTO-SHOES"

CORD AND FABRIC TIRES IN ALL STANDARD SIZES

Manufactured By

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2 No. 1562 Hot Shots
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C-2 Assortment

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Advantages of the Modern Potato Digger

By E. P. STAHL, Hyatt Roller Bearing Co.

THE farmer, like his business brother in the city, is constantly on the alert for any improved labor saving machinery which will lighten his burden and reduce his production costs. This is true of nearly all branches of agriculture, but in the potato fields of this country the development has been truly remarkable.

Just as the steel plow is the outgrowth of the wooden fork, used by primitive man, and the ten foot cut grain binder, the modern counterpart of the scythe, so the engine-driven, tractor-pulled potato digger of today is the logical evolution of the old back breaking four tine spade.

In 1866, by the methods then in use, it required 108 hours of a man's time to produce one acre of potatoes yielding 220 bushels. By the use of modern potato machinery, the time required to do the same amount of work, has been reduced to thirty-eight hours, which is a saving of over 64.81 per cent in time alone.

It costs the farmer $13.18 to produce one acre of potatoes, yielding 220 bushels by the old method. Up-to-date equipment has brought this cost down to $5.95 thereby showing a saving of 54.85 per cent in actual cash—and this wonderful change was brought about by the use of such modern machinery as the mechanical potato planter and the digger.

In localities where the potato is the most important commercial crop, it would be impossible to accomplish the harvest economically, profitably or on schedule time without the use of up-to-date potato machinery.

Mechanical potato diggers have been in use for many years. The mechanism is quite simple—a shovel nose travelling under the rows, digs up the soil in which the potatoes have grown. This soil containing the potatoes is delivered onto a steel rake, or elevator, which carries them toward the rear of the machine. This elevator is agitated and delivers the potatoes on top of the ground, free from dirt, and ready for sacking.

Potato diggers must operate under the most severe conditions, and anything that adds to their reliability and efficiency is highly desirable. The work is not only extremely heavy, but the machine is constantly working in a cloud of dust and dirt when the weather is dry, and in a sea of mud during the rainy Fall. The idler sprockets, and particularly the sprockets at the lower end of the elevator must work continually in dirt. This, of course, is a most severe working condition for the bearings. The finer dirt and dust tends to work its way into them, causing, increased friction which produces excessive wear. The addition of anti-friction roller bearings, encased in dust proof enclosures, represents a recent and important step in the perfection of the potato digger, and it has proven, through actual field tests, that a machine so equipped requires much less power and is far more dependable than one with plain bearings.

Recently a test was made upon two potato diggers, one equipped with plain bearings, and the other with anti-friction roller bearings. In order that conditions might be made identical as far as humanly possible, the test was made upon the two diggers in the same field, and on the same day—the same tractor being used to pull both machines.

Like all other machinery built to withstand the severe punishment experienced when working with tractors, the digger equipped with anti-friction bearings was more ruggedly built, weighing 250 pounds more than the plain bearing machine—and even though the weight was greater, the anti-friction bearing machine was operated by a four horse power stationary motor, mounted on the frame—whereas, an eight horse power motor, similarly mounted, was required to operate the other machine.

The roller bearings on the anti-friction bearing equipped machine were located on the rear axle, the countershaft, the front idler shaft, agitator or elevator sprockets and on the engine extension shaft.

These machines were both of the same size, being termed as seven foot diggers, and although the one weighed more than the other, the pounds pull necessary to operate them when working was equal. This demonstrated that the draft had been appreciably lessened, which is of still greater importance when the horse drawn machine is considered.

Notwithstanding the fact, the roller bearing digger was equipped with an engine only half as large as the other machine, it was evident, whenever bad spots were encountered the smaller engine took its loads with greater ease. It was, therefore, proven that the addition of roller bearings, and the improvements made in connection therewith, represents a step forward in reducing the cost of operation. But, of even greater importance, is the decrease of wear of the parts ordinarily subject to the greatest friction, insuring longer life to the machine and extending the period of the original investment.

INDIVIDUAL PLANTS SOLVE FARMER'S ELECTRIC SERVICE PROBLEMS

"ABOUT a year and a half ago I was asked by the dealer in this district, of a widely known lighting plant, to wire a certain farm and install a plant for him." says R. E. Hughes in an article on lighting plants in *Farmers' Magazine*. "Before this, and at the time I was prejudiced in favor of Hydro, largely because I had never seen a lighting plant before, and knew nothing about them or what they would do.

"Since then I have installed many more in this community (Oxford County, Ont.) and would like to tell you some of the facts about the operation of these plants, of which there are nearly two score in my district. One farmer whom I have in mind, told me that he is separating milk twice a day, running a churn, an electric washing machine and iron, besides lighting all farm buildings at a fuel cost of 30 cents per week. This plant cost this farmer $585.00 with the wiring extra of course.

"A plant which was installed in a cheese factory furnished light for the factory, dwelling house and curing room, besides running an electric washer, for five winter months, on 25 Gals. of Coal Oil. Other farmers tell us that their fuel costs per year run them in the neighborhood of $25.00. We know of fourteen farmers who are operating heavy working milking machines from electric motors operated by these plants. The kilowatt charge for generating electric current with these plants at the present price of coal oil, is between 5 cents and 6 cents per killowatt hour; churches and a country store in this district, also have installed these plants recently and considering the low Hydro charge, these institutions feel that they are receiving electric service on a basis comparing favorably with Hydro.

"By the Hydro's own figures they have given service to 1400 farms in the last ten years, while the lighting plant company, which I represent, have placed their plants on more than 1600 farms, in the last four years. Which is honestly serving the rural section the better?

"It is also my experience in this district that the user of a lighting plant is always the most enthusiastic about his equipment, and invariably uses more labor saving equipment.

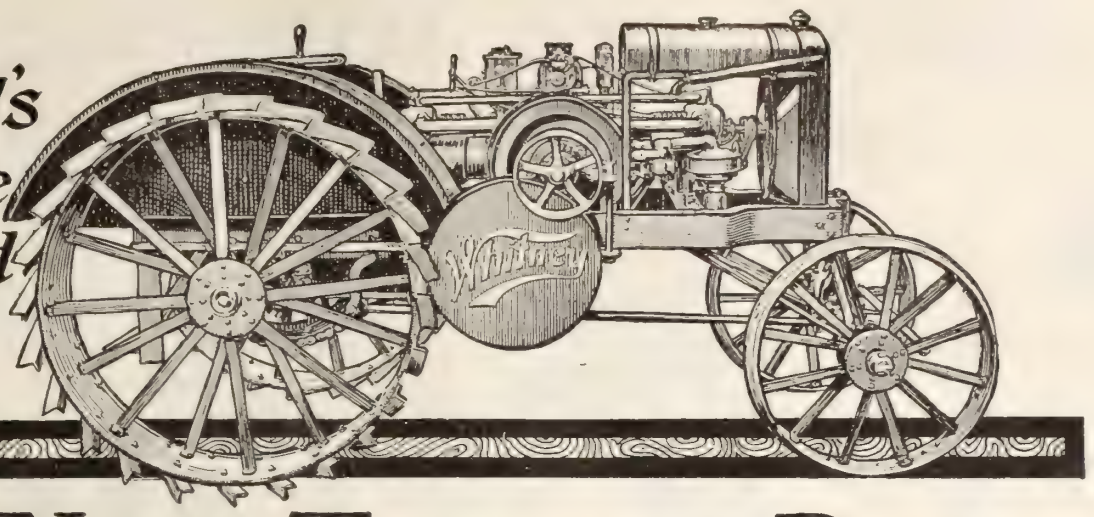
"Here is the question: If the 1600 farm homes, now using the lighting plant, had still been waiting for Hydro, how much would those farm homes have been without, in the way of conveniences?

"And what about the other thousands who are still waiting for Hydro, and who honestly expect, many of them, to get it this year?"

GROWTH OF POWER FARMING IN THE WEST

AN indication of the agricultural growth of Western Canada is shown in the reports on tractor sales. During the last year Western Canada purchased 10,279 tractors, and orders for 7,500 more are expected to be placed by the three prairie provinces this year.

The World's Lowest-Price Time-Tested Tractor



This New Tractor Price Will Jolt the Farmer Into Immediate Buying Action

WHITNEY has, without a doubt, accomplished the biggest single thing achieved in the history of the tractor industry—produced a thoroughly proven, medium-size, reliable tractor *at a price so low that it is easily within the means of every farmer in the country.*

This is the same reliable, time-tested tractor that has given such thorough satisfaction on thousands of farms during the past five years. It is only on the basis of *huge production* that Whitney has been able to produce this standard machine at a price so astoundingly low. The enormous resources of the new $5,000,000.00 Whitney corporation have been thrown into the manufacture of this one model machine.

Whitney will shortly announce its new price. That price is going to jolt the farmer into immediate buying action. He's ready to buy—the minute prices come down. You can bank on it. *He's going to buy—and buy hard!*

Whitney offers absolutely the best dealer proposition in the tractor world. At the new price, *you can place a Whitney on practically every farm in your territory.*

We are ready to give advance information *right now* to the dealer who wants it. Write or wire to-day.

The Whitney Tractor Co.
2707 Prospect Ave. - - - Cleveland, Ohio

Brief Specifications

Power—9 H.P. on drawbar; 18 H.P. on belt.

Dimensions — Length, 123″; width, 56″; height, 58″.

Weight—Domestic shipping, 3,000 lbs. Boxed for export, 3,900 lbs.

Transmission — Selective, 3 forward: 1¾, 2½, and 4 mi. per hr. Reverse, 2 M.P.H. All gears forged, steel cut and hardened, running in oil.

Motor--2 Cylinder opposed type 5½″ bore, 6½″ stroke, 750 rev. per minute.

Governor—Whitney Special fly ball type. Enclosed, gear driven.

Pulley—Direct driven from crankshaft. Size 11″ diameter by 6 3-4″ face. Clutch controlled. Pulley regular equipment.

Fenders—Pressed steel over rear wheels. Regular equipment.

The Whitney is a sturdy, time-tested field-proven tractor, built to pull two 14″ plows or operate a 22″x34″ thresher. It has the traction, strength and reserve power found in the best of the two-plow jobs built. It has not been "rated up." Instead, it is underrated. Bearings all oversized; drive wheels 6 inches larger than found on the average 2-plow machine. No extras to buy. A one-man tractor that will plow 6½ to 7 acres a day or draw a double 8-foot disc harrow on intermediate speed—2½ miles per hr.

Whitney TRACTOR

Automotive Accessories *and* Implement Equipment

BRIDGEPORT PUMP BUCKET EXPANDER

MOST motorists appreciate the value of a good hand pump, and if they have been forced to pump up tires with it they also realize the desirability of high efficiency, because the higher the efficiency the less the work required to pump up a tire.

The Bridgeport Brass Company have attempted to meet the requirements of an efficient pump in the following ways:

By installing a suitable check valve as near as possible to the outlet orifice of the pump cylinder. By using a patented connection between the base and the cylinder which expands the cylinder threads into the threads of the base, thus making a mechanical joint which is thoroughly leak-proof and therefore permanent. By using a seamless barrel cold drawn from sheet brass, which gives a perfectly round section and a polished surface. By using a device for mechanically expanding the bucket on the down stroke, so that the bucket will carry compression without slippage from the very beginning of the stroke, and also for the purpose of preventing the pump from becoming inoperative when it has been left for long periods of time without oiling or other attention.

The Bridgeport bucket expander consists of a specially stamped sheet brass cup mounted on the plunger rod directly beneath the leather bucket. The bucket is held between a large flat washer and a spacing bushing by means of a nut on the end of the plunger rod which clamps the assembly against the shoulder. The back washer is slightly smaller in diameter than the barrel of the pump, so as to give plenty of clearance on the up stroke and yet furnish plenty of support for the bucket on the down stroke and the expander is a specially shaped disc mounted on the spacing sleeve and held in position by a suitable spring. The spring is just drawn weak enough to allow the pump to give free passage to air on the up stroke, and the walls of the cylinder immediately the down stroke is started. On the up stroke there is a slight amount of space between the leather bucket and the expander.

Bridgeport Pump Bucket Expander

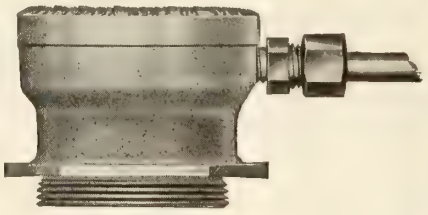
GASIFIER

THIS device utilizes the rich natural gas in the tank and, it is claimed, makes it possible to reduce to a fraction the feeding of wet gasoline through the carbureter. It sends dry gas to the cylinders and reduces the formation of carbon to a minimum.

The gasifier is attached to the top of the gasoline supply tank. Copper tubing leads from the gasifier to the inlet manifold which is arranged to receive the injector. An air outlet is provided in the top of the tank, at the end opposite the gasifier.

The suction created by the motor passes into and through the gasifier. This suction is fed by the fumes in the tank. Air is drawn through the inlet and circulated over the gasoline in the tank, forcing it to evaporate, thus producing further fumes.

The makers claim that the gasifier ensures a 50 per cent increase in mileage. It is manufactured by the Ideal Motor Appliance Co.



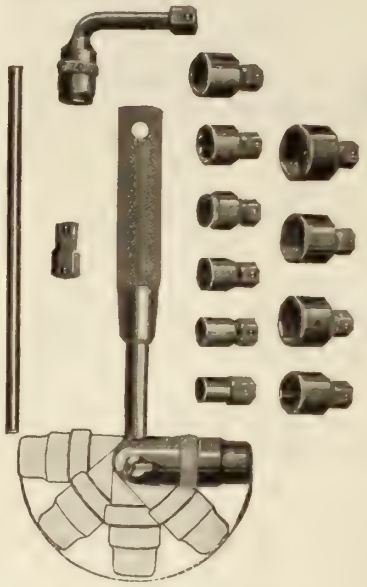
Gasifier

HYRATE BATTERY AND JAR GRIPPER

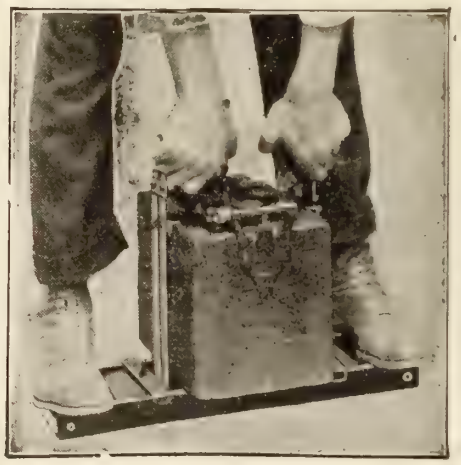
THE Service Station Supply Co. have placed on the market a new device which is of special interest to battery repairmen. It is known as the Hyrate Battery and Jar Gripper and is designed for holding the battery and jar while pulling out elements. The removal of an element from a battery jar almost invariably requires considerable force due to the expansion or buckling of the plates. Even when the jar is so cemented to the battery case that the element may be taken out without removing the jar, with the Hyrate gripper the makers say, it is easy to hold the battery while pulling out the element, and is also exceedingly easy to hold a jar when same has been removed from the case.

The gripper is readily adjusted to fit any size of battery, is made of high grade steel, and, the makers claim, will last a life time.

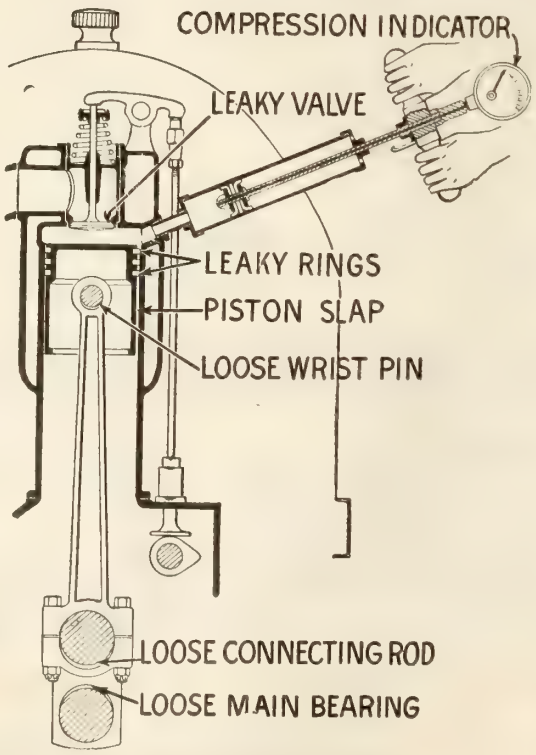
Order Separately
Not Included in Set



All-In-One Wrench



Hyrate Battery and Jar Gripper



Hammett Motor Tester

ALL-IN-ONE WRENCH

THIS is a ratchet socket wrench designed to reach parts inaccessible to the ordinary wrench. By pressing a button on the head of the wrench it may be set at any angle.

The ratchet is positive in action and, the makers say, cannot reverse itself. A turn of the knurled ring to the right and the ratchet works to the right, a turn to the left and it works to the left.

The wrench is machined from solid bar and is case hardened. It is made by the All-In-One Wrench Co.

HAMMETT MOTOR TESTER

THIS is a mechanical device for locating loose wrist pins, piston slap, connecting rod and main bearing knocks, leaky valves and piston rings, when the motor is not running.

When an engine is running there are two opposite conditions taking place, one is an explosion for power, the other is a vaccum or suction for taking in a new mixture. The Hammett motor tester, the makers say, produces the same effect on the motor when it is not running with the application of compression and vacuum in the firing chamber.

Each cylinder is tested separately, and, it is claimed, the operation is positive. The test is made when the motor is not running and with spark plugs removed.

It is manufactured by the Hammett Mfg. Co.

LANDIS CYLINDER GRINDING MACHINE TRACTOR

THE Landis cylinder grinding machine is of rigid construction, the bed consisting of a single casting. Special provision has been made for rapidly obtaining alignment of holes to be ground. The machine may be arranged for either direct connected motor drive or belt drive from lineshaft. The countershaft is of simple construction with tight and loose pulleys which require a single belt for driving the machine.

The grinding wheel head consists of two eccentrics, one within the other. Eccentricity of the wheel spindle is governed by the relative position of the inner spindle to the center line of rotation. Wheel feed is obtained by a mechanism located on the front of the spindle. Rotary movement of the spindle is controlled by a conveniently located lever.

The work carriage slides on a flat and a dovetail guide, both protected from dirt, grit, etc., by a roller curtain.

A centering device for aligning cylinder blocks, locates the holes in vertical alignment with the center line of spindle rotation before clamping.

The wheel truing device may be clamped at any position on the lower work clamping bar of the work carrying fixture. It is made by the Landis Tool Co.

EXCELLENCE PISTON RINGS

REGISTERED TRADE MARK MADE IN CANADA

REGISTERED TRADE MARK MADE IN CANADA

"ABSOLUTELY"
"Gas and Oil-Tight"

EXCELLENCE
TWO-PIECE
PISTON-RINGS

The Peak of Perfection

SECTION OF THE RING

Pat. June 3rd. 1919, in Canada and U. S.

Each gallon of gasoline has a given amount of power

And unless every ounce of power is exerted on the piston heads, an engine will not develop its rated horse-power.

EXCELLENCE RINGS positively prevent leakage between the piston and cylinder walls. They seal the firing chamber. They keep the spark plugs clean and efficient. They give you all the power you pay for when you buy your fuel.

EXCELLENCE RINGS can now be supplied for all cars taking the following sizes: 3¾ x ¼, 3¾ x 3/16 and 3 11/16 x 3/16. Other sizes will be available soon.

MANUFACTURED EXCLUSIVELY AND DISTRIBUTED BY

Wholesale Dealers of AUTOMOTIVE EQUIPMENT

Lamontagne Limited.

Quebec - MONTREAL - Winnipeg

Sell and recommend EXCELLENCE PISTON RINGS

REGISTERED TRADE MARK MADE IN CANADA

REGISTERED TRADE MARK MADE IN CANADA

EXCELLENCE PISTON RINGS

TELOMETER

TELOMETER is an automatic signal device, which warns the driver with time to spare, when the gasoline in his tank has reached a certain low level, when the oil in the crank case has reached a pre-determined low level, and just before the radiator reaches the freezing point and the boiling point. The installation can be effected by an experienced mechanic in a short space of time.

The connections are from the gasoline tank, the oil reservoir, and at the back of the radiator and connected to the face plate, containing three bulbs, one for the gasoline, one for the oil, and the other for the radiator. When the gasoline and oil has reached this low level, the light will light and remain lighted until a further supply is put in; then the light will go out. When the water in the radiator nears freezing point, the radiator light will light and remain lighted, givng ample time, the makers say, to heed the warning by covering the radiator and running the engine idle. When the danger point has passed the light will go out. Also, just before the water in the radiator begins to boil, the radiator light will light, warning that the engine is over-heated; by stopping the engine and letting the car remain until the water is cooled in the radiator, the light will go out. The current necessary to operate this device is taken from a storage battery. When the ignition switch is locked, no current can be consumed by the Telometer. The devise is made to fit any and all makes of cars and has no moving parts. It is made by the Telometer Manufacturing Company, Inc.

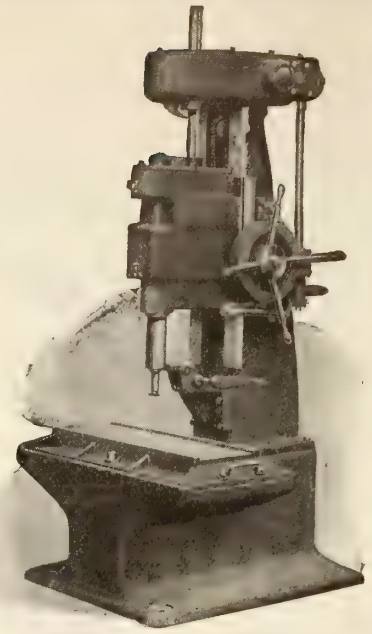
AUTOMATIC AUTO LIFTER

THE Walter Automatic Auto Lifter designed by Chas Walter, S. W. Black and Co., 43 Victoria Street, Toronto, and shown for the first time at Toronto Exhibition, is of considerable interest to garagemen and motorits. It is Automatic in action and is designed to relieve the pressure on tires by lifting the car off the floor and holding it there. It can be installed in any garage and requires no more space than the car itself occupies. To operate it is only necessary to drive the car into the garage; it passes over the lifter until the front axle, coming in contact with the front of the lifter, carries the lifter forward, automatically raising the car with it, leaving the wheels clear of the floor. The car is released and automatically runs off the lifter by the pull of a cord or by raising the lever with the foot or hand. The lifter is easily and quickly adjusted to any height of axle or any length of wheel base.

"PERFECT" DEMOUNTABLE RIM

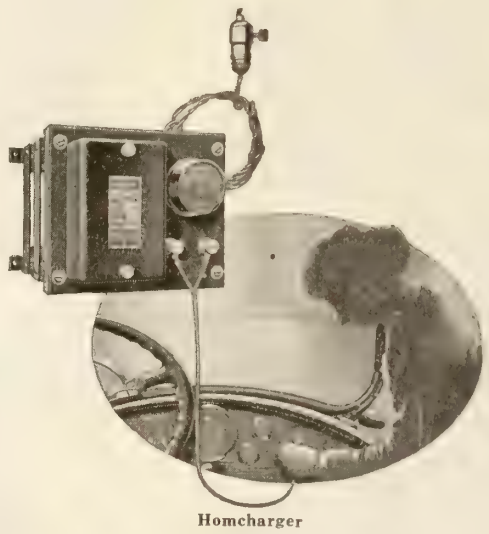
THIS rim permits the changing of tires in less than two minutes without the use of tools of any kind. It is automatically forced away from the wheel by the removing lug. The rim is divided into two sections. When the tire is on the rim these sections, or halves of the rim are bound together by a locking ring made from high grade spring steel. This ring has perforations corresponding in number to the projections on the rim. These perforations fall automatically opposite the projections after the first one is in place and by a slight pressure of the fingers the locking ring is shot home, making the rim a rigid, solid ring once more ready to be placed on the wheel. All possibility for side play, creeping, or up-and-down movement, the makers say, is absolutely eliminated, thus making it not only a squeakless, solid and immovable rim when set on the wheel, but the strongest and safest of rims

It is also claimed that owing to no tools being required to remove the tire, pinching or twisting of the tube is entirely eliminated. Manufactured by the Auto Rim Co., Ltd., 123 Bay Street, Toronto.



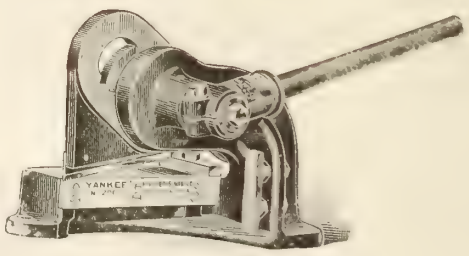
Foote-Burt Cylinder Reborer

Telometer

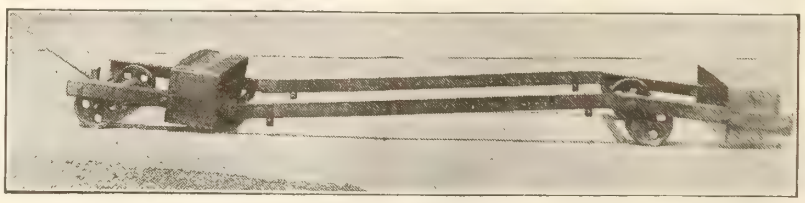


Homcharger

"Perfect" Demountable Rim



"Yankee" Brake Lining Cutter



Automatic Auto Lifter

"YANKEE" BRAKE LINING CUTTER

DESIGNED to shear brake lining and belting up to 6 in. in width and ⅜ in. in thickness, the "Yankee" cutter, recently offered to the trade by the North Bros. Mfg. Co., cuts off the tough material with one pull of a powerful lever, leaving a clean square end. Although the device is intended for attachment to the work-bench, it may be used as a portable tool, as its net weight is but 22 pounds.

Being only 11½ in. long and 7¼ in. wide, it occupies very little bench room. The frame of the apparatus is a substantial casting finished in dead black and the high grade steel cutting blades are actuated by an amply long hand lever through the medium of a rack and pinion movement.

HOMCHARGER

AN ingenious and timely device for the motorist has been perfected by The Automatic Electrical Devices Co., which is being marketed under the trade name of "Homcharger." As its name implies, the Homcharger is a device for charging the starting, lighting and ignition batteries, forming a part of all modern motor cars in the motorist's own garage.

The device is small and neat, measuring 5½ in. x 7 in. x 7 in. designed for mounting upon the garage wall. It is attached to the nearest alternating current lamp socket by means of an ordinary attaching plug. In order to facilitate the charging of motor car batteries without tearing up the floor boards to attach charging wires, or without removing the battery from the car, a neat nickel plated receptacle is furnished for mounting upon the dash board which is connected permanently to the wiring of the car. Thereafter, it is only necessary to insert the charging plug of the Homcharger into this receptacle and the battery immediately starts to charge. The standard Homcharger as designed for individual use, will, it is claimed, fully charge an ordinary 6 or 12 volt battery over night, at a few cents cost.

The device consists of a step down transformer and a simple rectifying valve which delivers a uni-directional current to the battery. An ammeter is furnished which shows the charging rate at all times, together with a 10-foot charging cable and plug to facilitate connection to the battery. The rectifying valve which is the heart of the device is actuated by a principle which permits of satisfactory operation over a wide variation of frequency, voltage, etc. It is automatic and fool proof.

FOOTE-BURT CYLINDER REBORER

THIS is a simple spindle reboring machine designed especially for reboring Ford and Fordson cylinders. It is furnished complete with reboring cutters and burnishing tools and, it is claimed, produces high grade work.

It is also claimed that the feed and speed used on the machine were specified by Ford engineers after a series of tests. It is made by the Foote-Burt Co.

VAN DRESSER REBORING TOOL

THE design of this tool is such that true centering is obtained without the use of a guide ring. Among the features are the hardened and ground feed bar, without threads, a 9¼ in. bearing with lower end close to cylinder bore to secure rigidity, and a long ground upper shank on the reamed head with feed bar. The reamer blades are made of high speed steel. The tool may be fed either by power or hand. Prices range from $142.50 for the No. 1 which has a capacity of 2⅝ to 3⅛, up to $216 for the No. 7 with a capacity from 2¾ to 4½ in.

The distributors are the International Purchasing and Engineering Co.

Garage Equipment

Proper Shop Equipment has become a big factor in the up-to-date Garage and Repair Shop.

Prices for such equipment are always worthy of consideration.

We have the Weaver Equipment which speaks for itself and the new prices are surprisingly low.

Write Us for Particulars.

Keyes Supply Company, Limited

Wholesale Automotive Equipment

OTTAWA : : ONTARIO

Queen 880—Connecting all Departments

BURD

High Compression PISTON RINGS

The World's Standard of Efficiency

permanent efficiency, therefore give better service efficiency—maximum power at the lowest expense for gasoline and oil—and prolong the life of the motor by keeping it clean and free from carbon. They are unequalled for lasting resiliency and permanent efficiency, therefore give better service at the end of six months than when first installed.

Backed By This Guarantee

Every Burd High Compression Piston Ring is **Guaranteed** to be free from defects in material and workmanship—and warranted to give more power, with less fuel consumption, than any other piston ring—when installed in cylinders that have not been warped or scored—or your money will be refunded after thirty days' use.

For sale by jobbers everywhere.

BURD RING SALES COMPANY of CANADA
322 McIntyre Block, Winnipeg, Man.
Burd High Compression Ring Co.,
Rockford, Ill., U. S. A.

A Sure, Hot Spark

The real joy of motoring is only possible when your car is "hitting on all four." The sure, hot spark of the "M & S" ball-pointed plug will guarantee such performance because the ball point concentrates the current and intensifies the heat.

It is *the plug with the hotter spark.*

The three-in-one terminal of the "M & S" plug is adapted to any style ignition, except Chevrolet, for which we supply a special model ball terminal. The Overland "4" is equipped with our No. 500 ½-inch standard.

Dealers—The "M & S" is the popular Made-in-Canada plug. Ask your jobber for it or write us direct.

RUSSELL GEAR & MACHINE CO., LTD.
1209 King Street, West, Toronto, Ontario

102

The Plug with the Hotter Spark

Garagemen and Dealers

ARE you ready for the coming season? Take a look at the top of this car. Can you offer your Patrons a top designed and built by expert coach builders?

Many men in your district are thinking now of buying a new winter car. Why not have the means to offer them a new car at the price of an accessory?

"Everything above the Chassis"

We need a live agent in your locality. The coming season will open wonderful opportunities.

Write us for particulars. We have something in the way of a service Proposition for Dealers and Garagemen that we are sure will interest you.

AUTO TOP AND EQUIPMENT CO., Limited

270 Dundas Street West, Toronto

The Implement Industry and The Tariff

Thomas Findley, Head of Massey-Harris Company, comments on the Agitation to put the Implement Industry on a Free Trade Basis

THE following statement, made recently by Thomas Findley, President and General Manager of the Massey-Harris Company, coming as it does on the eve of a general election should be of particular interest to all farm machinery dealers.

"The problems facing business men these days are most complex, and apparently they will continue so for another year or two, at least. Exchange, adjustment of wages, doing business on a falling market, changes of tariff in export market, and many other difficulties due to the late war, make the job of managing a manufacturing business a most unenviable one. To these very abnormal conditions must be added the possibility, as the result of the coming election, of more than ordinary tariff chages. In my industry we are facing the possibility of a complete change of base, from reasonable protection to free trade.

"I am hoping that the parties now definitely pledged to free trade in the implements of production for natural products, and in the materials for same, will reconsider these promises, since it is quite possible that they may be called upon to implement them within a few months' time. The putting of these industries, and the resultant list of free materials, upon the free list is so revolutionary a change in our fiscal system that we venture to say that neither the conventions adopting these resolutions nor anyone else can see the ultimate result of such a policy. Considering that neither party has made even a superficial investigation as to the effect of the policy upon the industries in question, I appeal to the leaders that they ought, in fairness to these important industries, to withdraw their specific pledges and be free, if the responsibility of office falls upon them, to deal justly and according to their judgment with the issue at stake. In the meantime, if the situation remains as it is, an appeal to the electorate is being made committing the parties to action which, on proper investigation, they may find to be greatly to the detriment of the country's interest.

"I flatter myself that I have given more study to the effect of free trade upon our business than any of the political leaders, and with an inside knowledge of conditions which they do not possess, yet I cannot forsee with any certainty the effect of free trade upon implement companies and upon other industries which must give up protection to give us free materials.

"Canadian manufacturers have been operating in the past under a system of protection, the implement companies receiving much less protection than most other industries, and now it is proposed to carry discrimination against the implement companies to the point of free trade. How is it possible to justify the protective system generally, at the same time throwing overboard to sink or swim one of the most essential and important industries in the country?

"I cannot see how the bulk of our revenue is to be raised without customs duties, and if that is conceded even to the extent of revenue, surely all the industries are entitled to at least the incidental protection thus afforded.

"In presenting the case of our company to the Tariff Commission a year ago, I discussed the effect of free trade upon our company, pointing out that my anxiety was not for the company, which could adjust itself readily enough to circumstances as they might arise, but that I was disturbed about its probable effect nationally, and particularly upon our workmen.

"My opinion is that free trade in implements means the inevitable shifting of the manufacture of Western Canadian implements from Ontario and Quebec to the Western Middle States. If there is to be neither tariff nor sentimental preference to offset the geographical handicap, we shall be forced sooner or later to establish ourselves on equal terms with our competitors. So far as my company is concerned, we are not going to lose our Western Canadian trade, even if to retain it we have to build another factory in the Western States. Therefore, our workmen, other industries which furnish us with materials, and those generally dependent upon them, are much more vitally interested in this matter than we are.

"As stated to the Tariff Commission, I do not anticipate that competitive conditions would immediately necessitate such a move, and if we could maintain —which now seems unlikely—our present relative business of 50 per cent. foreign and 50 per cent home, we might secure sufficient advantage from free materials for our foreign trade to offset our loss on home, but in the long run ordinary common-sense will indicate the advantage of being located in the midst of the raw material market, and near the ultimate consumer.

"In my tariff argument before the commission, I demonstrated, giving figures which cannot be controverted, that if every advantage possible were taken of the present tariff on farm implements the tax upon the farmer could not exceed an extra cost of one cent per bushel upon his grain. Surely such a charge is too trivial to risk experimenting with such an important industry, especially under the present industrial stress.

"Within the past year two countries, following the prevailing tendency of the times, have revised their tariff to compel manufacture within their country.

"These two countries are, by far, our most important overseas customers. If we are compelled to manufacture there to maintain our trade it will make more difficult the adjustment of our business to the proposed action in removing the Canadian duty.

"I am convinced that for the Eastern farmer there is no advantage to be hoped for from the change from the present very moderate tariff to free implements, but that, on the contrary, there is much more for him to lose. For instance, consider the city of Brantford, almost entirely dependent upon agricultural implement manufacturing for its prosperity.

"Anything which would adversely affect Brantford would react directly upon the farmers of Brant, and even further afield. Both Ontario and Quebec have a very large number of small but enterprising makers of agricultural implements, and scores of towns would be adversely affected by anything that would injure them. We have secured under the tariff some splendid branch factories of American industries, but, with no tariff, not only would these not be added to, but we would risk the closing of those already established. With regard to the Western farmer, as pointed out in much more detail in my tariff argument, there are many other factors than the tariff affecting the price of implements. Doubtless he would receive some temporary advantage from free implements, but nothing in comparison to what he expects, and such advantage would be at the expense of purchasing implements imported from the United States, thereby enriching that country at the expense of Ontario and Quebec."

Big Tractor Demonstration at Woodstock

WOODSTOCK, Ontario, will be the happy hunting ground during the fourth week in October for farmers and dealers in implements and tractors. The Ontario Plowmens' Association will again stage one of those big annual plowing matches and farm machinery demonstrations for which it is now famous.

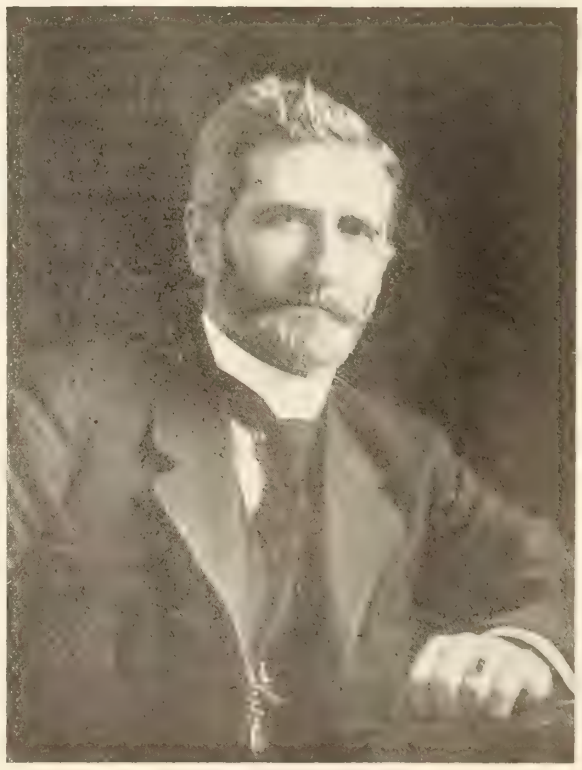
This year the district chosen is one of the best agricultural districts in Canada. Oxford county is justly famous for its agricultural and dairy produce and for its excellent farms. The association could scarcely have made a better choice.

The Hospital Farm will be the scene of operations. Tractors and farm machinery will be in operation during the three days of the demonstration. There will be no manufacturers' competition this year, but the usual tractor competition for tractor owners and their operators. Tractor plowing will take place on the second and third days, the first day being given over entirely to farm machinery demonstrations. Over $2,000 are offered in prizes.

The first plowing day, Thursday, October 20, will be devoted to tractor and horse plowing in stubble. The last day will see both tractors and horses plowing in sod.

The directors of the association are looking for a very large entry of manufacturers of tractors and machinery. They are also endeavoring to arrange a competition between horse-drawn plows and tractors. This should attract considerable interest and will be an educational feature.

Besides the demonstrations of individual electric plants by the manufacturers of such plants, the Hydro Electric Power Commission of Ontario will give demonstrations showing the farmers the value of electric power for farm operation.



J. LOCKIE WILSON
Managing Director Ontario Plowmen's Association.

There will be an information Bureau on the grounds to direct those who wish to secure rooms in private houses. There are three hotels in Woodstock which will provide accomodation at reasonable rates. Meals will be obtainable on the grounds, and ample parking provision has been made for automobiles. Woodstock can be reached by the Grand Trunk and Canadian Pacific railways and Radial Lines.

A banquet will be given on the evening of Friday October 21, by the County of Oxford and City of Woodstock, at which the prizes will be presented to the successful competitors.

Implement dealers will be given opportunities to see tractors at both belt and draw bar work, and will have an opportunity to get a line on the various machines suited to their particular localities, and to decide upon what line they want to handle if they are not already in on the power machinery end of their business. Automobile dealers will be interested in the power machinery work, if they contemplate branching out.

(Continued from Page 7.)

Western Canada has been the cradle of tractor development. From 1908 to 1912 the Winnipeg tractor contests acquired world-wide fame, and during those years the development of the tractor received an impetus which could not have been given to it anywhere else. The Western Canadian farmer faced a serious power problem and he saw a solution for it in the farm tractor. He had courage enough to take the tractor as it was and nurse it along.

With The Manufacturers

Noralto Oil Co., Ltd., was recently incorporated at Saskatoon.

M. A. Kennedy, Ltd., Toronto, have secured the agency for Austere cars and tractors.

The Comet Automobile Co., of Decatur, Illinois, has selected Simcoe, Ont., for a Canadian branch factory.

The Reo Motor Car Company is contemplating establishing a Canadian plant at Walkerville, Ont.

Fire which broke out on the second floor of the Avery Co's building at Texas recently, destroyed stock to the extent of $250,000.

The Canadian Garry Motor Trucks Corp. have chosen Fort William for the site of an assembling plant for Western Canada.

The Canadian Automatic Carburetor Co., will probably operate a factory in Toronto. Offices are already situated in Toronto.

Dodge Bros., Detroit, are negotiating for land for a new plant at Sandwich, this move being made to cultivate the Canadian and British Market.

C. A. Lister, C. B. E. vice-president and general manager of the R. L. Lister Co., of Dursley, England, has been visiting the Canadian branches of the company.

Universal Electric Ltd., have been incorporated in Ontario with head office in Toronto and capital of $80,000 to carry on wholesale and retail business in electrical appliances.

The Tiger Tire and Rubber Co., Belleville, Ont., have completed the installation of sufficient additional equipment in their new factory to bring their production of tires up to 450 per day.

H. E. Rice, formerly commercial manager of the Atwater—Kent Mfg. Co., has become associated with the American Bosch Magneto Corp. as assistant to A. T. Murray, president of the company.

Canadian Vesta Battery Corp., which at present have offices in Toronto, are considering the establishment of a plant in Toronto to meet the requirements of the Canadian market for their product.

The Parker Motor Car Co., Limited, manufacturers of the Parker Car, have completed arrangements for taking over the plant of the Canadian Motors and Machine Co., Limited, Quebec, for the purpose of establishing a distributing and service centre for Eastern Canada.

C. R. Standley, President of the Standley Skid Chain Co., Boone, Iowa, was in Toronto recently visiting the Campbell Agencies and completing arrangements to have the Standley luggage carrier made in Toronto. It is expected the factory will commence operations within thirty days.

Windsor Machine & Tool Works, have been incorporated in Ontario with head office in Windsor, Ont., and capital of $500,000 to conduct business as toolmakers, brass founders, metal workers and manufacturers of hardware of all kinds.

J. Burchall, formerly superintendent McKinnon Columbus Chain Company and McKinnon Industries Limited, has formed a new company known as the United Chain and Manufacturing Company at 114 Queenston Street, St. Catharines, Ont., and will manufacture tire chains and automobile parts.

W. Felderman, manager of the Regent Rubber Co., Toronto, has undergone a serious operation in Victoria Memorial Hospital. Mr. Felderman, who is well known in automobile circles is now on the road to recovery.

It is announced from New York that the General Motors Corporation will concentrate on export business at their Oshawa, Ont., plants.

The Peoria Drill & Seeder Co., Peoria, Ill., recently closed a contract with the Canadian-Avery Co., of Winnipeg to handle Peoria drills in Manitoba and the Western Provinces.

R. P. Warriner, western representative of the Champion Spark Plug Co., has just completed a survey of Manitoba and Saskatchewan in the annual "Dealers' Aid" campaign.

Benedict C. Cook, assistant factory manager of the Partridge Rubber Co., died in the Guelph hospital from injuries received recently when run over by a train.

The Perfection Manufacturing Company, of Minneapolis, Minn., have bought out the National Milker Company, of that city, and will market both the Perfection and National line of milking machines.

The production of Fordson Tractors at the River Rouge plant from March, to August 1, totalled 26,000. In August the 200,000th Fordson was built and will be kept at the plant as an emblem of the growth of the tractor business since its inception.

The Cadillac Motor Car Co. have resumed production on a schedule as great as that of last year, it was announced at a convention of Cadillac distributors at the factory recently. In 1920 annual production was on a basis of 20,000, representing practically 100 per cent capacity.

A deal for a modern plant has been closed by the Gary Motor Truck Co., Gary, Ind., and Gary trucks will be manufactured in Toronto for the Canadian export market. The Canadian company in conjunction with the American Gary company will be composed of Canadians. The organization of the factory sales forces will be carried out under the personal supervision of Frank Dawson, president of the Gary company.

The Midwestern Tractor Wheel Co., of Detroit, manufacturing a patented tractor wheel with adjustable cleats, have purchased a site at Amherstburg, Ont., where they will erect a factory. The company plans to erect a one-story building of steel and concrete, 200 x 400 feet. Modern equipment will be installed at a cost of $250,000. The company is capitalized at $1,000,000.

The H. A. Wood Manufacturing Company, of Belleville, have secured the Canadian rights for the Alemite products, chief of which is a lubricating system for automobiles. The Belleville company propose to manufacture for the Canadian market and may later branch out into the export field, particularly within the British Empire. Other automobile accessories and specialties as well as castors for furniture will be produced.

The Cameron Motors Corporation, which recently took over the plant of the Dauch Manufacturing Company at Sandusky, O., announce that they will bring out a new small general purpose tractor under the trade name of Sandusky Model A. It will be equipped with a four-cylinder Cameron air-cooled motor, and will be simple both in construction and design. The tractor will sell in the States for $425.

At Toronto Exhibition Boy and Slate Value Strikingly Demonstrated

OUR exhibit at this Exhibition easily drew the most attention of any place on "oil row."

Yet there was nothing very striking or very different about it—except the Boy and Slate signs. Three or four of these were placed in advantageous locations outside the exhibit. New epigrams were put on the slates every other day.

These Boy and Slate Signs Did It

They stopped the multitudes. They drew the comments. They got the people interested. The En-ar-co display was *the* oil display of the Canadian National Exhibition.

Just as this Boy and Slate Sign turned the trick in this particular case, so is it doing for dealers in gasoline and oil all over the country.

If there is not a dealer handling our scientifically Refined Gasoline and Lubricants in your territory, you can secure this profitable representation and this powerful Boy and Slate and Epigram Service.

Write us for free particulars. Send the coupon at once to one of our branches convenient to you. This is worth doing—right now. Forward the free coupon to us to-day.

CANADIAN OIL COMPANIES LIMITED

Branches: Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary.

To CANADIAN OIL COMPANIES, LIMITED.
Nearest Branch .....
Send me the information about that En-ar-co Boy and Slate Proposition.
NAME .....
ADDRESS .....
TOWN or CITY.....
I AM IN THE.....BUSINESS
(Indicate kind of Business.) M.T.I. 10.

GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

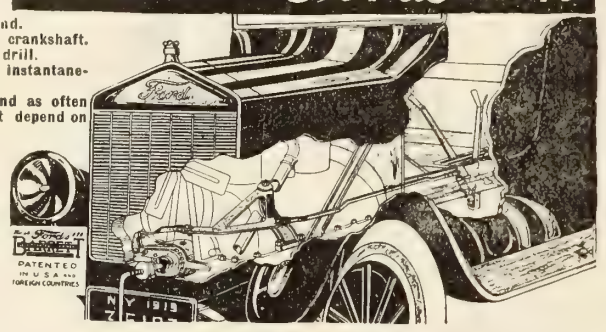
20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

Simple, Durable, Economical, Reliable,

BARRETT
SELF STARTER AND PRIMER
GUARANTEED FOR FIVE YEARS — For all Fords — $40



RELEASES automatically in case of backfire and does no harm to the operator, engine or starter.
No cables, no chains, no pulleys and no springs to wind.
75% increase of leverage on crankshaft.
Easy to install, no holes to drill.
It STARTS COLD ENGINE instantaneously even in zero weather.
Ready for starting any time and as often as wanted because it does not depend on the running of the engine for power.
All essential parts made of the very best steel.
ABSOLUTELY NOISELESS.
Not a luxury but a necessity.
Endorsed by prominent automobile engineers and mechanical Ford experts as mechanically perfect in every respect and the best that has come under their observation.
The Special Primer which is supplied free with every Starter, vaporizes the gasoline direct into the cylinders, assuring a quick, positive start. The Primer is also operated from the seat.

From agents or direct from
IMPERIAL AGENCIES, 195 Victoria St., TORONTO

BIRDSELL CLOVER HULLERS

Best for Threshing, Hulling and Cleaning { Little Red or Common Clover Seed; Big English or Mammoth Clover Seed; Alsike Clover Seed; Sweet Clover Seed }

THREE SIZES FOR CANADA

			Power Required
No. 2	Cylinders 27" x 32",	Capacity 3 to 5 bushels per hour,	6 to 8 H. P.
No. 1	Cylinders 30" x 36",	Capacity 5 to 7 bushels per hour,	8 to 10 H. P.
No. 8	Cylinders 40" x 52",	Capacity 7 to 10 bushels per hour,	10 to 12 H. P.

WE HAVE A SIZE TO SUIT EVERY NEED

ANN ARBOR HAY PRESSES

If in the market for a Hay Baler we can furnish in any size to meet your requirements. Write us or call and see us while in the city.

Birdsell Manufacturing Co.
Foot of George Street
Toronto, Canada

NEWS — OF THE TRADE FOR THE TRADE

ALBERTA

RUMSEY:—An automotive equipment business has been opened here recently by E. L. Young.

CALGARY:—The Graham Motor Co. have commenced operations here.

BRITISH COLUMBIA

VANCOUVER:—The Day-Smith Motor Co. is a new concern operating in Vancouver.

KERRISDALE:—A vulcanizing and repair business has been opened by Grant and Elener.

MANITOBA

NIVERVILLE:—A new garage and repair business has been opened here by Neufeld Bros.

GRAND VIEW:—Villeroy and Wolfe is the name of a new automobile and tractor repair concern here.

LA RIVIERE:—The partnership in the Automobile business of Scarf and Scales has been dissolved and the business in future will be conducted under the name of Scarf and Stevens.

ONTARIO

CHATHAM:—The Gray Dort Motors announce the appointment of W. T. Bush, as director of sales.

BARRIE:—McKnight and Newton are partners in an implement business which they recently purchased.

OTTAWA:—The Better Battery Service, Ltd., has been incorporated with a capitalization of $50,000.

NORTH BAY:—A. Girand will erect a garage here at a cost of approximately $20,000.

KINGSTON:—The Cook Auto Service Garage is equipped in the most modern manner to take care of every phase of automobile and truck repair. Oscar Cook is the manager.

MARKHAM:—A new farm machinery business has been established here by G. Lawson. Mr. Lawson has secured the Massey-Harris Agency.

ST. MARY'S:—James Maxwell, president of the firm of Maxwell Limited, manufacturers of agricultural implements, died on Sept. 29 at his home in St. Mary's.

TORONTO:—G. E. Gooderham and Co. have secured through the Ginsberg Motors Ltd., Montreal, the distributary rights in their territory for the Rolls-Royce car.

KEMPTVILLE:—L. G. Heimpel, who was lately connected with the Ford Motor Co., in the tractor division, has been appointed lecturer on farm engineering at Kemptville Agricultural School.

WINDSOR:—Frank M. Foster, proprietor of the Canadian Motor Sales, announced recently the appointment of E. J. Hawley as manager. Mr. Hawley was formerly associated with S. E. Loveridge, Hupp Agent, of Windsor.

WELLAND:—J. W. Kottmeier, sales manager of the John Deere Mfg. Co., attended the Advertisers Convention held in Hamilton recently. Floyd R. Todd, Vice-president of the John Deere Company gave an address.

SUTTON:—John Ford, a full blooded Indian, is a highly successful implement dealer here. He handles the John Deere line and has done a large business this year. He says the only way to sell right now is to go out after sales night and day.

PENETANGUISHENE:—The Penetang Garage, owned by Mr. LeBlanc of that place, which was partially destroyed by fire in September, is being reconstructed at a cost of approximately four thousand dollars. This work is being rushed to completion, and when finished will be occupied by James Yoksima of Toronto, who has taken over a two year lease of the place.

MEAFORD:—Geo. W. Matheson, formerly of Craik, Sask., and a prominent member of the Saskatchewan Implement Dealers' Association, has decided to settle permanently in Ontario, and will probably open an implement business here.

NEWMARKET:—W. Moss, of M— & Holt's garage, returned from rescuing a broken down automobile early one morning recently just in time to prevent the firm's safe from being blown open. As he drew up at the garage two men ran hurriedly away. On entering he found that everything was in readiness to "crack" the safe. The burglars had "jimmied" a back window open, and thus obtained entrance.

QUEBEC

HUNTINGDON:—Incorporation is announced of the Huntingdon Motors Limited, with an authorized capital of $25,000.

MONTREAL:—The Kennedy Taxi Ltd., will erect a garage on Cathcart and Mansfield Streets at a cost of $20,000.

MONTREAL:—W. F. Moore, auto radiator and auto sheet metal worker, has just moved into new quarters at 5 McGill College Ave., which have been fitted up and equipped with the latest devices for executing repairs of all kinds of radiators and sheet metal work. Messrs. Hill and Morin, battery repairers are located in the same building.

SASKATCHEWAN

KAMSACK:—Fire recently caused some damage to the garage of Setters, Ltd.

SASKATOON:—J. H. Early and Sons are building a new garage at a cost of $25,000. It will be up-to-date in every respect and will be 100 x 140 feet.

MEYRONNE:—Paradis and Bolstad have succeeded Paradis and McRoberts in the implement and auto business of that concern.

MACRORIE:—Honslow Bros., automobile dealers, cater for the repair, gas and oil business of travellers by offering free storage to any traveller who has repair work done or purchases gas or oil.

PREVENTING THE EXCESSIVE LUBRICATION OF THE FIRST TWO CYLINDERS ON FORD CARS

(Continued from page 10)

into the end of the tube, flush out the tube with kerosene. For this purpose be sure to use an oil gun because there are sure to be small particles of brass turnings left inside the tube after boring, and it is necessary to force them out. The tube may then be driven in and fixed by a set screw.

In order to check over the work and to be sure that the holes are clean, pour about a quart of lubricating oil into the tube and have a friend watch to see that oil runs out of all of the holes. Assemble the engine and before replacing the transmission cover pour about a quart of oil into the oil tube to fill all of the splash pans.

Replace the transmission cover and fill the system with pure oil, being sure, always, to strain the oil before it is put into the engine. If you will make a practice of cleaning the system twice during the season you will be pleased at the results. Your engine will run without collecting surplus carbon in the first two cylinders.

When it comes time to clean the oil tube simply remove the plug in the end and run a brush through it. A good brush for this work is sold for cleaning rifles.

With such a remodeled system you cannot use a heavy grade of oil, else the oil will be apt to thicken in the tube and your engine will not receive sufficient lubrication.

MAYBE ADAM LAUGHED AT THESE

Stuck Up and Hungry — Teacher: "Give an example of an absent-minded man."

Pupil—"The fellow who poured molasses down his back and scratched his pancakes."

The Altruist—Sceptic: If you have such an infallible remedy for baldness, why don't you use it?

Subtle Barber (very bald): Ah, sir, I sacrifice my appearance to bring 'ome to clients the 'orror of 'airlessness.—Punch.

Just Before the Battle — Mrs. O'Brien—"They say it's not polite to be helped twice, Mr. Flaherty, but ye'll take another piece of my cake, won't ye?"

Flaherty — "Indade, Oi will that, Mrs. O'Brien. Shure, it's the height of politeness to ate a sicond piece av such cake as this."—Western Christian Advocate.

The Silver Lining.—"Good Heavens, man; pretty badly smashed up, ain't you? Anybody with you?"

"Yes, the chap who was trying to sell me this used car."—Harper's Magazine.

A Futurist Worker.—"You look tired!"

"Well, it's hard work carrying a hod of bricks up to the third story."

"Have you been doing it long?"

"No—I start to-morrow!"—Simplicissimus (Munich.)

The Finale—Mrs. Brown—"I hear the vicar thinks your daughter has a real genius for reciting, Mrs. Smith."

Mrs. Smith—"Yes. All she wants, he says to me, is a course of electrocution, just to finish 'er off, like." — London Opinion.

A Beginning.—The Theosophist — "Does your husband believe that his soul leaves his body while he sleeps?"

The Materialist—"I'm not certain; but he's got a suspicion that his money leaves his pockets."—The Bulletin, Sydney.

The Muskeg's Mother—British visitor, out in Canadian West: "And do you encounter many alligators in these streams?"

Native—"Gators? Nix."

Visitor—"Aw, pardon me, I think I meant the species of amphibious rodentia colloquially known as the muskrat. Is it numerous hereabouts?"

Native—"Sure. We got plenty of them bilious rhododendrons in these here adjacent and superfluous waters."

Visitor—"And am I correct in conjecturing that it is the muskrat that lays the muskegs?"

The Only Question.—"I wonder how many men will be made unhappy when I marry?"

"It all depends upon how many times you marry."—Kasper (Stockholm).

Logical—"Say, Madelon, this liver's something awful."

"I ver' sorry, mon cheri," answered his French bride. "I spick to-morrow wiz ze liverymans."—The American Legion Weekly.

Explosive.—Rastus (after a visit to the doctor): Dat doctah sure am funny.

His Wife—How come?

"Made me swallah two cartridges filled with powdah, and then tell me Ah shouldn't smoke. As if Ah would."—Cartoons Magazine.

Farmers Are Ready to Buy --- Sell Cletracs

A good crop has been harvested—exceptionally good in most localities—and farmers who have been **thinking** Cletrac all year are now ready to **buy.** Join the Cletrac crew now and finish the year strong.

You can sell several farmers Cletracs for Fall plowing, if you start today. Many other farmers will need one or more Cletracs the first thing in Spring. Get them signed up this Fall so that they can sell their extra horses and save horse feed and so they can get acquainted with Cletrac during the Winter months.

Cletrac will do a great many cold weather jobs and do them well. You will find Cletrac the best farm proposition on the market today.

We have an exceptionally good contract for you. Write us today for the details. Ask also for our interesting booklet, "Pay Dirt in the Tractor Field."

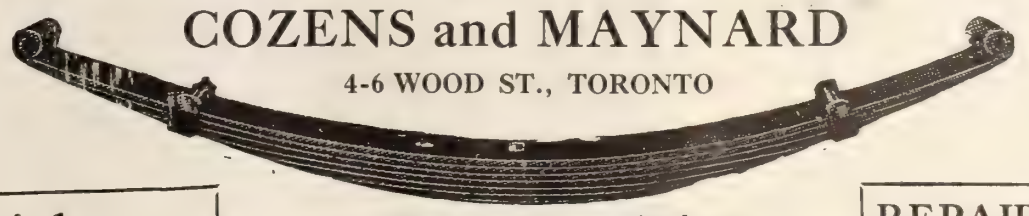
SPECIFICATIONS:
Horsepower: 12 at drawbar, 20 at belt-pulley.
Length: 96 inches.
Width: 50 inches.
Height: 52 inches.
Weight: 3455 pounds.
Turning circle: 12 feet.
Traction surface: about 800 square inches.
Centre to Centre of Tracks: 38 inches.
Belt Pulley: Diameter 8 inches, face 6 inches.

THE CLEVELAND TRACTOR COMPANY
OF CANADA, LIMITED

Home Office: WINDSOR, ONT.
Western Sales Office: 261 Fort Street, WINNIPEG

Cletrac TANK-TYPE TRACTOR

Special Spring Service Station
COZENS and MAYNARD
4-6 WOOD ST., TORONTO



Special Springs Made-to-Order

We build special springs to order—for any type and make of automobile or truck.
We also specialize in Repair work such as straightening axles, chassis frames, etc.
Write for our Proposition—then let your patrons know you can give them this service.

REPAIRING
REBUILDING
REMODELING

IMPLEMENT PRICES BEING REVISED

THE manufacturers of farm machinery are revising their prices on all implements for the 1922 season. The new prices will average from 10 to 20 per cent lower than prices prevailing during 1921. Some concerns have already announced the new prices and others will follow suit immediately.

PRICE REDUCTION BY JOHN DEERE MFG. CO.

THE John Deere Manufacturing Company, Limited, of Welland, Ontario, announce a price reduction of 10% on their Hoover Potato Diggers and a flat reduction of $125.00 on their "Waterloo Boy" Tractor. The reduction on the tractor brings the prices down to the lowest at which it has ever been sold and brings this useful implement within the reach of every farmer.

INTERNATIONAL HARVESTER PRICES CUT

THE International Harvester Company of Canada, Ltd., has announced prices for 1922, effective at once. The reductions in price on some of the leading implements are as follows: 6-foot binder, reduced $55.00; 5-foot mower reduced $22.00; 13-marker single disk drill reduced $37.00; Side delivery rake reduced $27.50; 12-16 disc harrow reduced $18.00; Manure spreader No. 6 reduced $45.00.

Prices on the remainder of the line are reduced proportionately. In referring to these new prices an official of the Company said:

"In determining these prices, we have made a careful study of market and labor conditions, and have based our price reductions on the lowest possible raw material and production cost that can, under the most favorable conditions, be forecast for the season of 1922. By this you will understand that we have disregarded entirely inventory cost, as well as current cost of production."

"At these new prices, farm implements are cheaper, pound for pound, materials and workmanship considered, than any other manufactured article the farmer purchases."

MASSEY-HARRIS TO RESUME OPERATIONS

A PARTIAL reopening of the Toronto factory of the Massey-Harris Company, which has been closed down for the last couple of months, is likely to take place on October 10th. For the present, however, it will be impossible for the company to take back more than a small number of its employes, as the amount of business on hand will not provide work for more than a comparative few. The company will notify those of its employes for whom jobs can be provided. Officials of the firm are hopeful that the next few months will bring forth a sufficiently improved flow of orders to make possible a gradual increase in the staff to full strength.

REORGANIZATION OF BEAVER TRUCK CORP.

THE Beaver Truck Corporation has been reorganized with authorized capital at $1,500,000.

The company has been organized on a profit-sharing plan not only for the employees but for the investor as well. The company has decided to issue certificates to investors entitling them to a cash discount on the purchase of a Beaver truck. These will be negotiable and can be turned in and will be accepted by the company as cash.

In order that the servicing of the trucks will be properly looked after 200 service stations equipped with parts are being established all over the country, and as the occasion arises more will follow. The parts will be put in at the company's expense and the dealer will only require to pay for them as they are sold.

The directors are as follows: H. J. Waddie, Hamilton, president, Canadian Drawn Steel Co., W. A. Emory, Burlington, director of Arcade Ltd., Hamilton, H. R. Williams, Hamilton, and W. Conklin, Kingsville.

H. R. Williams is manager and K. R. Townsend, formerly with R. Syker Muller, Montreal, advertising manager.

PARKER MOTOR CAR CO. TAKE OVER PLANT

THE Parker Motor Car Company, having a capitalization of ten million dollars, have completed negotiations with Caron Bros. to lease from September 1 sufficient space in their Longue Pointe Works, Montreal, to provide for the assembly on a large scale of the company's car, Royal Six. The space leased is 64,000 feet, with power to increase to 100,000 feet by May 1, 1922. The company estimates that 4,000 cars per year will be turned out by the plant when in full operation. Active operations will, it is said, begin the latter part of October.

The company has also completed negotiations with the Canadian Motors & Machine Co., Limited, Quebec, whereby they will take over the plant of this company for the purpose of establishing a distribution and service centre for Eastern Canada, and also to utilize this plant for manufacturing the various small units required, which can be economically produced in Canada.

The plant leased in Montreal will be the main assembling plant of the company, which will work in conjunction with the Quebec plant where a number of the units will be manufactured. When in full operation from 400 to 500 men will be employed in Montreal, of which the majority will be skilled mechanics, and about 150 men in Quebec.

The officers and directors are as follows:

President, Sir Alexander Bertram; 1st vice-president, W. H. Parker, Montreal; 2nd vice-president, H. A. Bertram, Montreal; secretary-treasurer, Kenneth F. D. Dewar, Montreal; Sir William Price, Quebec; Hon. Rodolphe Lemieux, K.C., Montreal; F. W. Ross, Quebec; Col. J. A. Scott, Quebec: T. J. Dillon, Welland; C. F. Doutre, Montreal; Thos. Craig, Quebec. The executive board are: Cecil F. Doutre, chairman; W. H. Parker, sales and advertising service; H. A. Bertram, production purchasing and plant; Kenneth F. Dewar, Comptroller and Finance; James A. Wright, design.

THE CLARK-TURNER PISTON CO. ESTABLISHES FACTORY BRANCHES

AN announcement has been made by the Clark-Turner Piston Company of Los Angeles, Cal., manufacturers of DELUXE pistons, concerning the establishment of factory branches at important distributing centres in the United States.

Arrangements have been made in each case with well-known firms to act as special distributors who will handle warehouse stocks and whose reputations for service are such as to assure all piston users of satisfaction. These warehouse stocks are located so that any part or section of the United States can be served in twenty-four hours or less on any size or oversize of pistons desired. Those so far appointed are the Kansas City Motor Parts Co., 1506-08 McGee Street, Kansas City, Mo.; Bentley and Diehl Bros., 114-16 So. Van Buren Ave., Freeport, Ill.; the Westervelt Machine Corporation, 921, Eighth Ave., New York City, and another special distributor for the Southern States to be announced later.

It is said that each warehouse will carry a stock of pistons running in the neighborhood of thirty thousand, including every kind and size made, the line representing pistons for over twelve hundred different motors.

GENERAL MOTORS MAKE OSHAWA EXPORT CENTRE

NEW YORK—Manufacture of all export models with the exception of the Cadillac car and the General Motors truck will be concentrated by the General Motors Corp. at its Canadian plant, Oshawa, Ont. It is stated that concentration of such production at a single point will place one executive in charge of all export production with a better realization of export needs. Its purpose is to produce a line of cars more reliable and more thoroughly tested which for these reasons will be better fitted for foreign trade. Another purpose is to give greater flexibility to the manufacture of such cars, not only because of changes in the manufacturing programs but because of detail necessary to meet export needs.

In connection with the concentration of foreign trade manufacturing in Canada, Paul Fitzpatrick, who is now vice-president in charge of operations for the General Motors Export Co., will be transferred from that organization and made assistant to Alfred P. Sloan, Jr., with duties pertaining to the transfer of operations to Oshawa and the study of all problems incident to them. P. S. Steenstrup, vice-president in charge of sales, will exercise full authority in the export organization, subject to the president, and all personnel heretofore reporting to Fitzpatrick will report to Steenstrup.—Motor World.

GILL MANUFACTURING CO. ANNUAL CONVENTION

CHICAGO—The annual sales convention of the Gill Manufacturing Co., was held at the Chicago Beach Hotel during the week of September 19. Representatives from all parts of the country were counted in the attendance of 150, which included the 39 branch managers and members of their sales organization, together with the factory sales department.

Following the first two days which were given over to athletics and the renewing of old acquaintances, a three day business program was carried out, during which sales and advertising plans for the coming year were discussed.

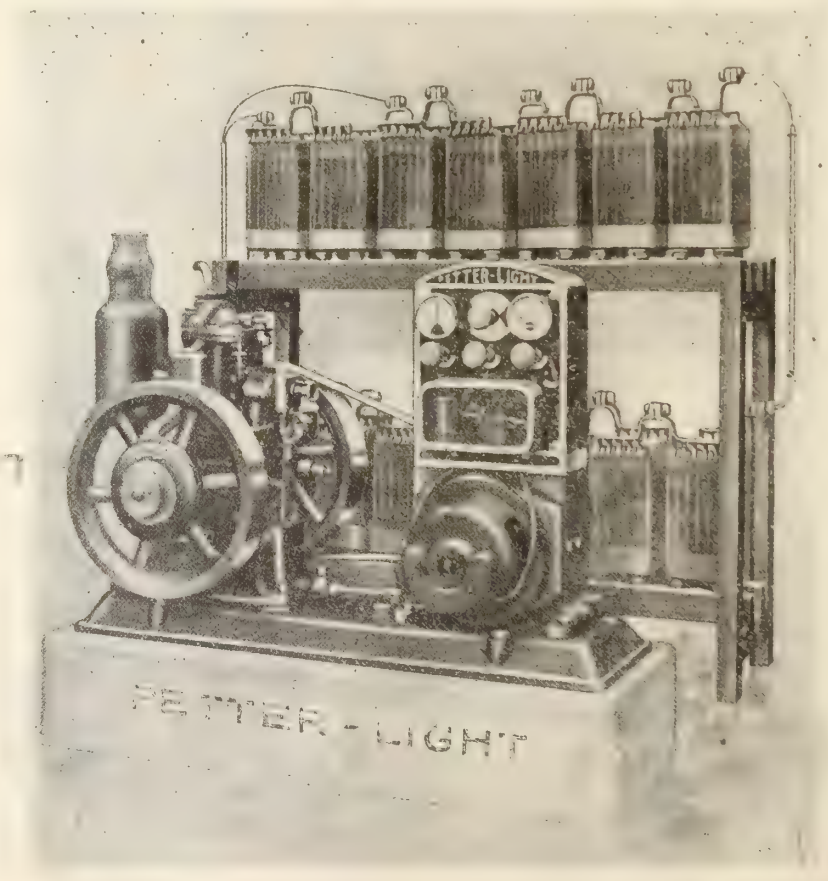
"Constructive Salesmanship" was the subject of an address given by Harry C. Spillman at the banquet which was held at the Beverly Country Club. E. P. Chalfant, president of the Gill company, presided as toastmaster.

ADOPT ANSTED MOTOR FOR NEW DURANT CAR

NEW YORK — Announcement is made by Durant Motor, Inc., that the Ansted Engineering Co., at Connersville, Ind., has been adopted for use in the Durant six cylinder car, formerly the Sheridan, which will be placed on the market about November 1. A contract has been placed for the manufacture of a large number of these motors. Although the Ansted Engineering Co., is controlled by the United States Automotive Corp., which is also the holding company for the Lexington Motor Co., the Connersville Foundry Corp., and the Teetor-Hartley Motor Corp., it was stated at Durant headquarters that no significance was to be attached to the use of the Ansted motor in the Durant car beyond the belief by Durant that it is the best motor of its kind available. The motor designed by Durant engineers for use in his four cylinder car will continue to be made by the Continental Motors Corp. — Motor World.

J. E. FROST IS DEAD

JAMES EDWIN FROST, a director of the Frost & Wood Co., Smiths Falls, Ont., and director and secretary of Smiths Falls Malleable Castings Ltd., died recently at his home in Smiths Falls. Mr. Frost had been in rather poor health for some time previous to his death and had to hand over his active part in the business.



PETER JUNIOR ENGINES

THESE engines are manufactured by Peters Limited, of Yeovil, England and distributed in Canada by R. S. Griffith, 371 St. James Street, Montreal. In design they create an impression of sturdiness as well as simplicity, the makers say.

The engine is built for the use of kerosene as fuel, not merely adapted to its use, while for a small extra charge it can be fitted up to run on town gas or gasoline. The main bearings are designed with large bearing surfaces, which, it is claimed, assures long wear; ths is borne out by the fact that one of these engines ran continuously for 239 hours without sign of wear.

Another feature of this engine is that it is valveless and springless, thereby, it is claimed, lessening the chances of it being out of order.

In addition to the oil engine this company is manufacturing a lighting plant which is illustrated on this page, and which can be connected directly or indirectly to the oil engine.

CANADIAN Motor, Tractor and Implement Trade Journal BUYERS DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

AUTO ACCESSORIES
Auto Top & Equipment Co., 270 Dundas St. W., Toronto.
Brown Engineering Corp'n, Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Cozens & Maynard 4-6 Wood St., Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
Lamontagne, Ltd., Montreal.
Motor Mart of Montreal, Montreal, Que.
Russell Gear & Machine Co., Ltd., Toronto.
Shaw Auto Salvage Parts Supply Co., Toronto.
Manufacturers Canadian Service, Ltd., Montreal.
Willys-Overland Ltd., West Toronto.

AUTOMOBILE LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILES
Motor Mart of Montreal, Montreal, Que.
Willys Overland Ltd., West Toronto.

AUTOMOBILE TIRES
Ames, Holden, McCready, Montreal.

BARN EQUIPMENT

BEAN MACHINERY

BEET MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BEARINGS

BINDERS
Birdsell Mfg. Co., South Bend, Ind.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING

BATTERIES

CARRIAGES

CREAM SEPARATORS
De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS

CORN HARVESTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CORN MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CULTIVATORS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CUTTERS

DAIRY SUPPLIES
De Laval Co., Ltd., Peterboro.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

DIES

DISCS

DITCHING MACHINES

DRILLS, TWIST

DRILLS, GRAIN
International Harvester Co., of Can., Ltd., Hamilton, Ont.

ELECTRICAL EQUIPMENT

ENGINES
R.S. Griffith, 371 St. James St. Montreal
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

ENSILAGE CUTTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

FEEDERS

FARM MACHINERY
Birdsell Mfg. Co., South Bend, Ind.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

FEED CUTTERS

FENCE POSTS

FENCING

GRAIN BLOWERS.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

GRINDERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
S. Vessot & Co., Joliette, P.Q.

HARROWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HAY LOADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HAY RAKES

HAY CARRIERS

HAY PRESSES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HULLERS (Clover)

LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

LIGHTING SYSTEMS
R.S. Griffith, 371 St. James St. Montreal
R. A. Lister Co. (Canada), Ltd., Toronto

LIME AND FERTILIZER SOWERS

LUBRICANTS
Canadian Oil Co., Toronto.
Imperial Oil Co., Ltd., Toronto.

MACHINE TOOLS
Windsor Machine and Tool Works, Windsor.

MANURE CARRIERS

MANURE SPREADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MARINE FITTINGS

MOWERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MILKING MACHINES
De Laval Co., Ltd., Peterboro.
R. A. Lister Co. (Canada), Ltd., Toronto

MILLING CUTTERS

OILS
Canadian Oil Co., Toronto.

PISTON RINGS
Brown Engineering Corp'n, Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Lamontagne Ltd., Montreal, Que.

PLOWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER AND LIGHT EQUIPMENT
R. A. Lister Co. of Canada, Ltd., Toronto.

POWER MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER SWITCHBOARDS

POTATO MACHINERY

PULVERIZERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

PULPERS

RAKES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAPERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAMERS

ROLLERS

ROLLER BEARINGS

SCUFFLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SEEDERS

SCALES

SCREW PLATES

STABLE EQUIPMENT

SILOS

SLEIGHS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SILO FILLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SOCKET WRENCHES

SEPARATORS (CREAM)
De Laval Co., Ltd., Peterboro.
R. A. Lister Co. (of Canada), Ltd., Toronto, Ont.

SPREADERS, MANURE
International Harvester Co., of Can. Ltd., Hamilton, Ont.

SPARK PLUGS
Russell Gear & Machine Co., Toronto.

SPRINGS
Cozens & Maynard, Toronto.

STARTERS
Imperial Agencies, 81 Victoria St., Toronto.

STAMPINGS

TELEPHONE APPARATUS

TRACTORS
Advance—Rumley Thresher Co., Inc., Toronto, Winnipeg, Calgary.
Cleveland Tractor Co., of Canada,
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

TRACTOR PLOWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

TOOLS
Windsor Machine and Tool Works, Windsor.

THRESHERS
Advance—Rumley Thresher Co., Inc., Toronto, Winnipeg, Calgary.
Birdsell Mfg. Co., South Bend, Ind.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

THREAD CUTTING TAPS

TIRES
Ames, Holden, McCready, Montreal.

TWIST DRILLS

TRUCKS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

WAGONS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

WATER BOWLS

WIRES AND CABLES

J. & J. Taylor's Safes

One J. & J. Taylor Safe, inside dimensions 15 inches deep, 2 feet 6 inches wide, three feet 11 1-2 inches high and fitted with a built in compartment.

PRICE $250.00

One J. & J. Taylor Safe 18 inches deep, two feet 9 inches wide, four feet 5 inches high, fitted with a steel compartment.

PRICE $200.00

Both safes are in good condition and can be bought at a price that will save considerable money to the purchaser.

MacLean Publishing Co., Ltd.
143 University Ave. Toronto

Sell the line already half sold

Confidence

The significance of the Lister reputation to the farmer is this: No such world-wide reputation could ever have been built up unless Lister Farm Machines afforded genuine satisfaction to the user by means of their year in and year out reliability.

Their efficient service in use ensures the farmer against the delays and losses due to inferior design, material and workmanship.

The dealer who sells Lister Farm Machines has half his selling problem settled in his favor, because the farmer has confidence in the Lister name.

SOME LISTER LINES:

Lister Engine
Melotte Cream Separator
Lister Milker
Lister Premier Cream Separator
Lister Grain Grinders
Lister Ensilage Cutters
Lister Farm Lighting Systems

We welcome enquiries for literature and dealer terms.

R. A. Lister & Company (Canada) Limited

Stewart St., near King and Bathurst, Toronto
or at Wall St. and Portage Ave,
Winnipeg

A Selling Feature Possessed by no other Feed Grinder

"Vessot" Grinding Plates outgrind and outwear all others. They are cast, turned and tempered by special secret process that ensures extra density, hardness and wearing qualities. There is only one Feed Grinder in which "Vessot" Plates are used—the "Vessot."

"Vessot" Feed Grinders have, therefore, longer life and greater efficiency, they require less adjusting and give less trouble in operating.

The "Vessot" Agency Plan you can get from any International Harvester Company branch office is interesting because, in addition to good profits, it offers you selling features possessed by no other feed grinder.

INVENTED AND MANUFACTURED BY

S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by

International Harvester Co.. of Canada, Limited

Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John

Dairy *and* Household Supplies

SELLING THE MILKING MACHINE RIGHT

IF A DEALER wishes to build a large milking machine business and one that will stand the test of time he must build it on a sound basis. In his policy he will combine education with selling.

The production of good milk and products from that milk free from taint, is of vital importance. The dealer who handles dairy equipment is as concerned in producing a clean product as the dairyman. Every dairyman who puts high grade dairy products on the market with the aid of a milking machine, is a standing advertisement to the efficacy of such a machine.

A milking machine should be sold as much for its ability to produce clean milk as for its labor saving qualities. It is not enough to convince a man he can dispense with some help after installing a milking machine, he should be told and convinced that just as good or better milk can be produced with the aid of a milker, properly operated as by hand milking.

As we have pointed out repeatedly in these columns, it is absolutely necessary for the dealer to educate his customers in the proper operation, and especially in the cleaning of all dairy equipment.

The average farmer can stand to be jogged occasionally along the lines of hygiene and cleanliness, particularly in regard to the handling of milk. He is often careless and slipshod in his methods and is inclined to blame the machines he is using when anything goes wrong. If he is using a milker and neglects it and has his milk frequently rejected by butter and cheese makers because of poor quality he invariably attributes his bad luck to the mechanical milker. He doesn't investigate to find out where the real trouble lies, all he wants is something to pin the blame to. So careless have many farmers been with their mechanical milkers that some large cheese-making concerns refuse to buy milk from a farmer who operates one. Such conditions usually result in the milker being discarded and the farmer reverting to hand milking.

Now this clearly shows that someone must do some educational work and it seems to us the dealer is the only one to do this effectively. There is no better advertisement for a milker than the production of high grade milk. The dealer should never lose sight of that fact; and he should also bear in mind that a farmer who is neglecting his machine is not likely to impress his neighbour—who is a prospective purchaser—to the point of buying.

Only those machines which are so constructed that they can be easily cleaned and kept in a sanitary condition should be handled. After a sale is made the purchaser should be thoroughly instructed. It is not sufficient to hand him a book of instruction which he very likely won't read thoroughly enough to grasp the information it contains. It will be to the dealer's advantage to stay with the farmer until after the first milking to show him how to wash and care for the machine. Whenever he happens to be in that district again he should call on the farmer to see how he is getting along and to give him some extra instruction.

The dealer can't lay too much emphasis on the necessity of cleanliness. The milker should be cleaned after each use, the same as any other piece of dairy equipment; first, rinsed in cold or lukewarm water, then scrubbed with a brush in hot water to which some cleaning compound has been added and then scalded with boiling water or live steam. This applies to both metal and rubber parts which come in contact with the milk. After being washed and scalded, the parts should be put in a clean place until wanted for use again. The proper cleaning of the milker is a very simple operation, yet it is neglected by many dairymen. These simple rules should be preached by the dealer until every one of his customers follows them vigorously. When they do they will realize that a clean milking machine means money to them, and when the dairy manufacturer finds that the mechanically drawn milk is of uniformly good quality there will be produced at a lower cost better milk and better products from that milk, which will all result in bigger business for the dealer.

DEPENDABILITY OF MILKING MACHINES

"THERE is no question but that today most mechanical milkers are more efficient than the average hand milker when everything is taken into consideration," says Professor O. Erf of the Ohio University. "Their increased use in the future is not a matter of conjecture."

"The dependence that may be placed upon a good machine is of great importance. A well-made substantial machine is necessary for the best results. The milker is used twice a day and in many cases four times a day for 365 days in a year. No other machine on a farm is used so often, hence the necessity for good construction."

– Business of Farming.

NEW DELAVAL BOOK ON MILKING

THE DeLaval Company have just issued a booklet entitled, "A Better Way of Milking." It is a 32-page book containing articles by professors of dairying and others, designed to help both the dealer and the dairyman. Dealers who desire a real good book on milking machines and dairying, should apply to the DeLaval Co. who will be glad to supply them with "A Better Way of Milking."

BLUE RIBBON ELECTRIC MILKER

THE Electric Milker Corporation, Chicago, have placed on the market a milking machine the complete plant of which is mounted on the cover of the milk pail. It operates on the vacuum system, but, it is said, with the size and weight of the parts so greatly reduced that the entire operating mechanism, consisting of an electric motor, pulsator and pump, can easily be carried in one hand.

This milker, it is claimed, permits of the greatest flexibility. Each unit is provided with its own power plant, its own pump, its own pulsator, its own vacuum control. It is compact in design and is easily kept clean.

CANADA'S DAIRY BUSINESS INCREASING

CANADA'S output of dairy products increased $9,000,000 last year over the year before.

The amount of capital invested in the dairy factories, was $32,767,317, and the number of employees 11,211; the amount paid in salaries and wages being $8,776,676.

The De Laval Milker

Both save time and eliminate drudgery twice a day, 365 days a year; both increase the quantity of the product; both improve the quality of the product; and both are made by De Laval, the oldest, largest and best-known manufacturers of their kind in the world.

Cows and Cash

After last year's experience when it was proved conclusively that the dairy cow was the most economical and profitable means of marketing low-priced farm feeds; when credits were "frozen" in every section except where cows were milked; when bankers reported that the dairy cow was about the only means of obtaining ready cash which the farmer had; there should be no question in the mind of any dealer what lines to push and what lines the farmer needs, especially the same conditions prevailing this year.

The De Laval Company has a better proposition for both the agent and farmer than ever before. Prices are right, terms are right, and there is a great need and demand for both De Laval Separators and Milkers.

If the De Laval Company is not adequately represented in your community, now is the time to get in touch with us and start working with the De Laval Agency.

The De Laval Separator

THE DE LAVAL COMPANY, Ltd.

MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

Sooner or later you will sell the

De Laval

Opportunity is Knocking on the Door of Every Live Garage Owner

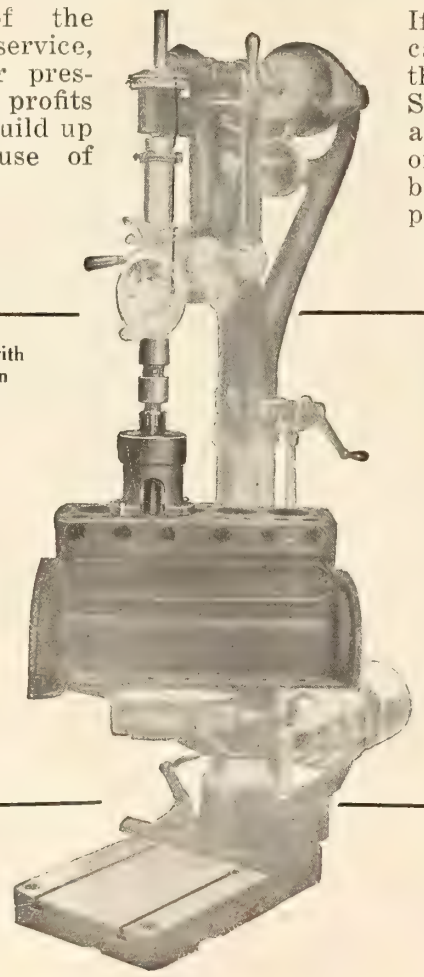
Two Business-Building Factors Which Mean Increased Business for Every User.

The First is the

UNIVERSAL CYLINDER REBORING TOOL

This fast, accurate tool brings right to your own shop all the essentials of an up-to-date reboring department. With the UNIVERSAL REBORING TOOL you can rebore a cylinder in less than fifteen minutes and do the identical work handled by the big automobile companies.

Think of the better service, the wider prestige, the profits you can build up by the use of this tool.



If you doubt the capabilities of the UNIVERSAL just ask a representative of any of the big Motor companies.

Operating with power-driven drill press

The Second is

Wilkie

Scientifically-Correct One Piece

PISTON RINGS

A large stock of Wilkie Piston Rings always on hand is a safe and sure way to gain the friendship and business of more motorists.

Send for a few samples of Wilkie Rings. Examine them closely and you will easily see why the tight-fitting, one piece joint, and the flawless construction makes a perfect seal.

Stocked in regular and over sizes. Order samples from your jobber to-day.

Why the Universal Always Leaves a Smooth Bore

The smooth-cutting performance of the Universal rests in the design of the cutter heads. The cutters are ground so that the exact amount of cutting clearance is given. Owing to the conical point of pin corresponding to the taper on back of cutters and being adjusted all at once by simply turning the pin it is impossible for each cutter to take off other than an equal amount of stock.

Let the UNIVERSAL TOOL and WILKIE RINGS start to work for you at once. Drop us a line for further particulars.

"More Power To You"

Windsor Machine and Tool Works Limited

312-316 Pitt Street West, Windsor, Ont.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

MONTREAL, Southam Bldg. WINNIPEG, 901 Confederation Life Bldg. NEW YORK, 1133 Broadway. VANCOUVER, 314 Carter-Cotton Bldg., 198 Hastings St. W. BOSTON, 734 Old South Bldg. CHICAGO, 405-6 Transportation Bldg. LONDON, ENG., 88 Fleet St., E.C. 4

VOL. III, No. 11 TORONTO, NOVEMBER, 1921 Subscription Price $2.00 Per Year

200% Profit

The equivalent of a bushel of corn, worth from 30 to 40 cents, when fed to good cows will produce about three pounds of butter worth from $1.00 to $1.50—200% clear profit, as the manure, skim milk and calf pay for the cost of care and housing. What line of farming will pay farmers better than this? None—and they know it.

Farmers who milk cows have a steady cash income; they have the money to buy needed equipment, and they are buying De Laval Separators and Milkers.

Therefore, follow the line of least resistance and sell the farmers who have the money the equipment they need and want.

It may be the agency for the De Laval line—the easiest selling, most widely used, most popular and profitable equipment of its kind—is open in your locality. If so get in touch with us and start doing business now.

THE DE LAVAL COMPANY, Ltd.
MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

The De Laval Milker

Both save time and eliminate drudgery twice a day, 365 days a year.

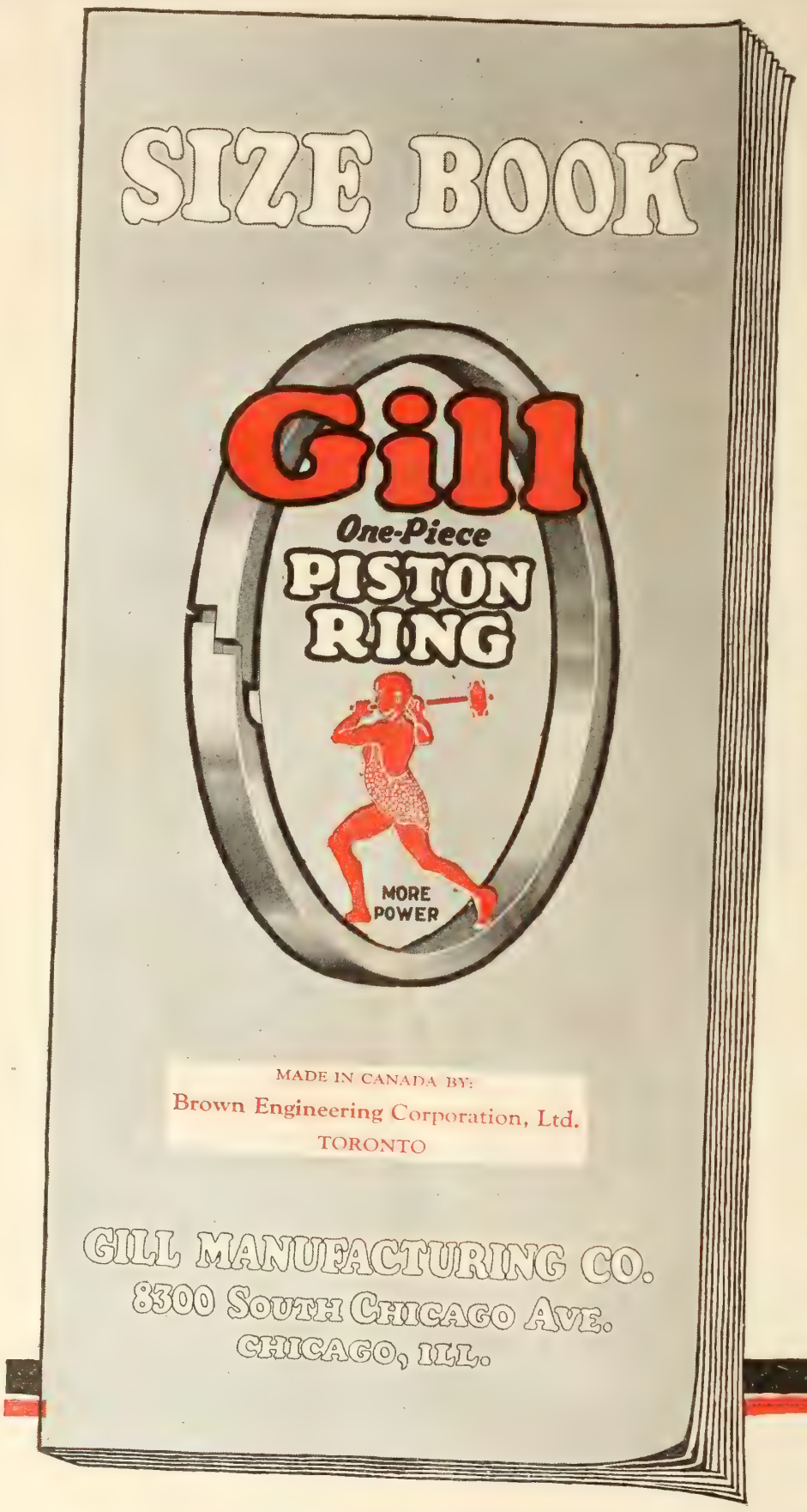
Both increase the quality of the product.

Both improve the quality of the product.

Both are made by De Laval, the oldest, largest and best-known manufacturers of its kind in the world.

The De Laval Separator

Sooner or later you will sell the
De Laval



Gill
One-piece Piston Rings

The Gill Size Book

The purpose of this book is to simplify the sale of piston rings for you. Every make of automobile, truck, tractor, and aeroplane manufactured has been recorded as far as possible, together with their past and present models, number of cylinders, piston rings, and piston ring sizes required for each. Stationary and marine engines are included.

The Gill Size Book has been sent to every garage, repair shop, service station, jobber, and accessory store in the country. You can secure additional copies without charge by addressing the Brown Engineering Corporation, or any of its jobbers.

You are invited to write us at any time for piston ring size information not found in the Gill Size Book.

Identify the Gill One-Piece Piston Ring by the joint, but do not measure its merit by the joint *alone*.

Gill Piston Rings are obtainable for every make of internal combustion engine manufactured. In case you are unable to secure Gill Rings, we will be glad to furnish you the name of the nearest Gill Jobber.

MADE IN CANADA BY:

Brown Engineering Corporation, Ltd.
415-19 King Street, West Telephone Adelaide 425
TORONTO, CANADA

Stocks carried in all the principal cities and towns of Canada by Canadian General Electric Company, Limited

LAST CALL

This Book Tells How 700 Dealers Made a 300% Increase in One Year

You must know your product and know the modern method of selling to be successful under present business conditions. The half-baked business man gets nowhere.

Hundreds of power implement men have already made application to the Rumely Tractor Schools. These men are on the way to increase their business 300%.

Last year 37% of all Advance-Rumely dealers attended the schools. The total volume of business done by these 37% was nearly double the business done by the 63% stay-at-homes.

Experts Train You Free

The Rumely schools were created to help Rumely dealers sell. You are taught to "know your tractor" by experts. Other experts teach you how to sell. There is no charge, and attendance requirements are very simple.

A School Near You

Heretofore schools were held at our factories in LaPorte, Indiana. Many attendants have traveled thousands of miles.

This year complete schools will be held at Advance-Rumely Branches throughout the country. You will attend the school in your territory. You will be saved the long trip. You will receive the same instruction nearer home.

Last Call
Write for This Book Now

The complete story of the great Rumely Tractor Schools—how they are operated—what they teach dealers—what they have done—and the greater things we expect them to do for Rumely dealers—is told in this book. In addition there are many letters from dealers who have attended—wonderful testimonials—proof that no man should miss. If you are interested in being successful and making more money, get the book. It points the way straight as a die. Tells when and where schools will be held. Merely write us on your letterhead and the book will be sent free.

The Rumely Tractor School is merely one example of how the Advance-Rumely Thresher Company co-operates with dealers.

"The Advance-Rumely line includes kerosene tractors, steam engines, grain and rice threshers, alfalfa and clover hullers, and farm trucks."

ADVANCE-RUMELY THRESHER CO., INC.
48 Abell St., Toronto, Ont.
CALGARY, ALTA. REGINA, SASK.
SASKATOON, SASK. WINNIPEG, MAN.

RUMELY OilPull TRACTOR

ADVANCE-RUMELY

H29

The HART OF YOUR CAR

Is your experience in selling Batteries ---Profitable?

Or are all your profits eaten away in the subsequent repairs to batteries which at first offered greater inducements to you?

Dealers and Service Stations are fast realizing the *real* profit there is in selling the HART STORAGE BATTERY—because there is no "come-back."

A dealer in an Ontario town sold 68 HART BATTERIES and only one was returned for *minor* repairs.

Another in a small Quebec town sold 40 HART BATTERIES—*not one came back for adjustment!*

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WORKS AT ST JOHNS, QUE.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

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Woodstock Plowing Match Draws 55,000

In Spite of Bad Weather on the First Two Days of Match, All Previous Attendance Records Were Broken. Big Display of Farm Machinery and Excellent Work By Tractors

"THE largest demonstration of farm machinery and the finest exhibition of plowing ever seen at a plowing match in Canada," is the manner in which J. Lockie Wilson, or "Lockie" as he is known to hundreds of plowmen all over Ontario, summed up to the M. T. I. representative the International Plowing Match, Tractor and Farm Machinery Demonstration held at Woodstock, Ontario, October 19—21. Mr. Wilson, who is managing director of the Ontario Plowmen's Association, under. whose auspices the demonstration was held, has every reason to be proud of the efforts of himself and associates. Thousands of farmers, from as far east as Glengarry and as far west as Windsor, gathered on the Ontario Epileptic Hospital Grounds Woodstock, to take part in the competitions or to watch their favourites plowing, and to see the latest in farm machinery, and equipment. Although farmers formed the bulk of the attendance there was a large number of dealers present—particularly from the surrounding neighborhood,—some of whom were exhibiting and demonstrating new machines they had added to their lines.

The attendance for the three days was very large. Owing to the fact that the people kept coming and going and moving from one point of interest to another, it was difficult to estimate the crowds, but the officials of the plowing match place the aggregate for the three days at about 55,000. And it is no exaggeration to say that if the weather had been as good on the first two days as it was on the last day this number would have reached nearly 70,000.

Demonstration Well Staged

The demonstration was extremely well handled and moved along with an easy clock-like precision. Some snags were encountered but they were dealt with with tact and diplomacy, and what at one time appeared to be serious obstacles were brushed aside and everybody was as happy as could reasonably be expected.

No competitions were staged on the first day, this day being given over entirely to demonstrations of farm machinery and tractor plowing. In spite of the rain and an extremely cold wind, several hundreds watched the tractors turn the furrows. They were treated to fast and exceptionally fine work. There was a time when the farmer criticised the tractor's finish, but at Woodstock they saw work that had a finish as good as any man could desire.

The soil on the whole was good and some excellent plowing was accomplished by both tractor and horse plowmen. On the last day the competitions scheduled for both tractors and horses were in sod. Unfortunately for the tractor plowmen, owing to a shortage of sod land they had to operate in a root crop field in this competition. But, regardless of such a serious drawback, the work done was of a high order. There were 210 entries in all, including 74 tractors.

Farm Machinery Exhibits

One of the most important features of the demonstration was the exhibition of farm machinery and equipment. It was large and practically all the manufacturers making or selling implements and tractors in Canada were represented. There was

Top, W. Fletcher's yoke of pure-bred Holstein bulls drawing an old-time wooden plow. They attracted great attention. Centre, M. G. McLeod of Galt, "striking out." Bottom, C. W. Clubine, winner of tractor competition for amateurs, stubble plowing.

a long street, of about two or three hundred yards, lined on one side by exhibitors and on the other by dining tents. The farmers crowded in and around the tents where the tractors and other implements were on view in hundreds. At times it was hardly possible to get near enough for a peep. The exhibitors were all pleased with the interest taken in their goods and with the long list of prospects they were able to obtain. While it was not primarily a selling "bee" many sales were made.

Valuable Publicity At Plowing Match

Manufacturers are recognising the value of these plowing demonstrations in advertising their goods. They see in them an opportunity of getting closer to their prospects and customers than is possible at such big affairs as the Canadian National Exhibition. At the big exhibition the farmer has so many things to attract him, such as the live stock display and judging, and displays of farm produce of every description, to say nothing of the hundreds of other things, that he has only a limited amount of time and interest to devote to the implements with which he does his work. It is different at the provincial plowing demonstrations, there are no side shows to take up his attention so that he has ample time and opportunity to examine and make himself familiar with the latest thing in machinery and equipment. And the opportunity the manufacturer has is unlimited. He gets the farmer's undivided attention and also gets him in the mood where it is comparatively easy to sell him.

Dealers in Evidence

The importance of these gatherings to the dealer is also great. Some real live ones were there with exhibits, and a large number who were not demonstrating anything were mixing with the crowd and no doubt learning things which will be valuable to them in their selling campaigns this fall and winter.

The following is a list of the exhibitors:

Angio Oil Co., Toronto—Gasoline and Oils.

Advance-Rumeley Thresher Co., Toronto—Oil-Puff tractors.

The Banwell-Hoxie Wire Fence Co., Hamilton, Ont.—Gates and fences.

T. E. Bissell Co., Elora, Ont.—Disc harrows, packers and mulchers.

H. F. Bailey & Son, Galt, Ont.—Hinman Standard milking machines.

Cleveland Tractor Co., of Canada, Windsor, Ont.—Cletrac tractors.

Cochrane Foundry and Machine Works, Tillsonburg, Ont.—Engines, buzz-saws, pump jacks, grinders and buffers.

Cockshutt Plow Co., Brantford, Ont.—Horse-drawn and tractor plows.

J. I. Case Threshing Machine Co., Toronto—Case tractors, plows, hay pressers, ensilage cutters.

John Deere Mfg. Co., Welland, Ont.—Waterloo Boy tractors, manure spreaders, etc.

Delco Light Company, Toronto—Electric Plants.

The Eureka Planter Co., Woodstock, Ont.—Root cutters, hay and stock racks, lawn mowers, garages, etc.

Electrion Power and Light Co., Woodstock, Ont.—Electrion lighting plants.

The Canadian Fairbanks-Morse Co., Toronto—Electric plants, engines, etc.

John Fowell & Son, Woodstock, Ont.—Papec cutting box.

The Hardie Mfg. Co., Petrolia, Ont.—Spraying machinery.

Hoag Engine Co., Brantford, Ont.—Engines.

Hydro Electric Power Commission—Electric appliances.

Imperial Oil Co., Toronto—Gasoline and oils.

The Jackson Wagon Co., St. George, Ont.—Wagons.

R. A. Lister Co., of Canada, Toronto—Engines, cream separators, milking machines, etc.

Massey-Harris, Toronto—Tractors, implements, sleighs and wagons.

Monarch Tractors, Ltd., Brantford—Monarch tractors.

Macartney Milking Machine Co.—Milking machines.

Macauley Pope, Toronto—Nelson tractors.

The Otley Simpson Co.,—Revolt ditching machine and cheese presses.

The Robert Bell Engine and Thresher Co., Seaforth, Ont.—Imperial tractors, Reliable tractors, and threshing machines.

Reid Lubrication Co., London—Oils.

Samson Tractor Co. of Canada, Oshawa, Ont.—Samson tractors.

Jas. Stewart Mfg. Co.—Pipeless furnaces and heaters.

Tide Water Oil Co.—Veedol oils.

Woodstock Wagon and Mfg. Co., Woodstock—Wagons.

Weed Harvester Co.—Weed harvester.

Foamite Firefoam Co., New York—Fire extinguishing apparatus.

M. A. Kennedy, Ltd., Toronto—Fiat and Austin tractors.

Tractor Plowing Contests

The tractor contests drew a large number of entries. On the second day of the demonstration, when the plowing competitions commenced, besides the horse plowing two tractor contests were staged. One class was for those engaged solely in farming. Each applicant had to take an affidavit that he had never been employed as a demonstrator or in any other capacity by a manufacturer. In this class there were twenty-six entries. The other tractor contest was open to all. Twenty-two entered this competition practically all of whom were experts. This was plowed in sod.

In the amateur class machines of various makes and sizes drawing two, three and four furrow plows were used. Some excellent plowing was done and there was little to choose between the first four winners.

The expert class, in which a gold medal was offered, brought out a field of twenty-two all of high-class calibre and keyed up to win. The plowing was distinctive, and the equal of the best horse plowing on the grounds. The awards in these two classes were as follows:

Class 6—Tractor competition, open to those engaged solely in farming (26).

1. C. W. Clubine, Oakridges, Ont.—Samson and Cockshutt plow.
2. Ernest McCuaig, Walkerville, Ont.—Samson and Massey Harris plow.
3. D. McCampbell, Alvinston, Ont.—Samson and Cockshutt plow.
4. Fred Yeomans, Agincourt, Ont.—Case and Cockshutt plow.
5. Murray E. Tyndall, Seaforth, Ont.—Imperial Cockshutt plow.

Championship—Best plowed land in stubble.
W. O. Grienzebach, Woodstock.

Tractor competition for experts, Gold Medal only.
F. G. Sinclair, Toronto—Samson and Cockshutt plow.

On the last day of the demonstration, Friday October 21, the tractor contest scheduled was in sod and for those engaged solely in farming. Twenty-eight entered. Owing to all available sod land being used up this contest had to take place in root and corn-land. The going was hard for the operators, it being a practical impossibility in some places to make a good strike-out and difficult at all times to do good plowing owing to the loose nature of the soil. One operator said he must have adjusted his plow two or three hundred times in his first strike-out. In spite of all that the work was remarkably good and speaks volumes for the ability of the farmer in handling the tractor. The awards in this class were as follows:

Class 8—Tractor competition solely for farmers, (28).

1. Hugh Ferguson, Cottam, Ont.—Case and Cockshutt plow.
2. C. W. Clubine, Oakridges, Ont.—Samson and Cockshutt plow.
3. Fred Yeomans, Agincourt, Ont.—Case & Cockshutt plow.
4. John R. McVicar, Alvinston, Ont.—Samson and Cockshutt plow.
5. Norman King, Churchill, Ont.—Samson and Cockshutt plow.

Contest Between Horse and Tractor a Fiasco

On the program was scheduled a contest between the tractor and the horse. Through some misunderstanding, bungling, or some other fault, this was a fiasco. According to a statement by the manufacturers they as a body refused to participate in the event when the conditions of contest were made known. The conditions laid down by the Association were, that a tractor, pulling a two-furrow plow, would contest with four teams, each drawing a single furrow plow, and judging would be based on time and quality of work.

The manufacturers refused to compete under these conditions but said they would be willing to enter with one tractor pulling four plows against four teams. The Association was firm in its resolve to carry out its plan with the result, so far as the tractor manufacturers were concerned, there was no contest. Yet in publishing the reports the Association stated that the horse-drawn plows defeated the tractors by 25 minutes in time and a margin in quality.

Interesting demonstrations were staged by the Canadian Foamite Firefoam Company. Two structures at the back of the headquarters tent, each about sixteen feet high and sixteen feet square, were set on fire. Before the match was applied each structure was drenched with about forty gallons of gasoline. This, with the high wind that was blowing, caused a great blaze. Thousands of farmers watched this performance each day and were surprized and delighted to see how quickly the stream of fire-destroying chemical wiped out the blaze.

The Ancient and The Modern

A team of oxen—or bulls to be exact—gave a plowing demonstration each day, much to the amusement of the crowds. Whenever they appeared everybody seemed to leave off looking at everything else and hied him to the scene of the demonstration a la pre-Christian era. A power-farming enthusiast in a facetious mood when casting his eyes over the field and noting the oxen, the horse, and the tractor all busy plowing remarked that he was fortunate in one day to see the pre-historic, the medieval, and the modern all performing the same function together.

Horse Plowing

In the horse plowing classes the work done was praiseworthy and so uniform in quality the judges had a hard time making the awards. In some cases a minute inspection of the crowns and finish had to be made before a decision was reached.

It is curious that a large number of the prize-winners in the walking plow classes were using plows made by Gray, of Uddingston, Scotland. The championship in sod was won with a Gray plow and the championship in stubble was won with a Cockshutt punch plow. The championship for riding gang plows with a Cockshutt Beaver gang.

The Banquet

The concluding event of the plowing match was a banquet on the Friday evening in the Armouries, given by the city of Woodstock and the county of Oxford. Speeches were delivered by several members of the provincial cabinet and by members of the Ontario Plowmen's Association.

Automotive Equipment Association Convention

THE stage is all set for the sixth annual convention and third annual business exhibit of the Automotive Equipment Association, to be held in Chicago, November 14-19. An interest which extends far beyond the membership is apparent as the time approaches.

This year, through the experience gained in preceding conventions and exhibits, an effort has been made to make the affairs of greater value than ever to the membership.

The convention and various hours for the exhibit are given in detail on next page. One of the innovations this year is the requirement concerning attendance of the members at the exhibits on two of the afternoons during the convention. This has been done in order that there be some certainty of business contact in the exhibit.

The Canadian Automotive Equipment Association, which is an auxillary of the American Association, will be present in full force. The Canadians are arranging to have a special session of their own during the convention, to discuss conditions peculiar to Canada. One of the points to be brought up will be the advisability of holding a large equipment show early in 1922. This will probably be on the lines of the Winnipeg show but of a larger nature. The jobbers feel that the Canadian National Exhibition is not the best place to stage an automotive show, where the interests of the crowd are divided and only a small percentage who view the exhibits are really interested. A show, at the beginning of the year exclusively for automotive equipment would be, in the opinion of the jobbers, the better medium for reaching the motoring public.

At the Chicago show the great discussion will be the sales promotion scheme which was inaugurated at Macinac Island last summer and which has done much to stimulate the merchandising of automotive equipment since the plan has been in operation.

The committee has announced that the show from a financial point of view is already a pronounced success. There are indications that a large number of jobbers whose stocks have run down will be replenished and other new orders will be placed.

Manufacturers from all over the States and Canada have taken space and will have on exhibit their full lines and many new devices will be shown for the first time.

C. W. Clubine, winner of the amateur tractor class in stubble, finishing. He used a Samson tractor and a Cockshutt plow. Note the straight, well-turned furrows. As good a sample of stubble plowing as can be seen anywhere.

Your Prospect File Can Sell for You This Winter

THE automobile dealer must not only possess the information concerning his prospects that will enable him to present his product intelligently to them, but he must STORE IT SYSTEMATICALLY, says Motor World in a recent issue. He must keep it so arranged and classified that he can call upon its individual and collective strength quickly and efficiently.

He must have a prospect file. But the prospect file, to be of real sales value must be more than a tabulation of information concerning possible buyers. It should be a source of selling energy, an inspiration and a fountain of merchandising knowledge. It must tell the dealer not only to whom he can sell but WHY.

A well kept prospect file will enable the dealer to analyze his territory's buying power and intelligently direct his selling effort. It is important that dealers, to-day, know who can purchase their cars and keep up an intelligent contact with these prospects.

The prospect file is the first step in systematic selling.

What the Prospect File Consists of:

A prospect card and a duplicate are the features. These cards are identical in form and should contain the essential information about the prospect that is needed to intelligently close the sale. The card should be a permanent record of the selling activity of the dealer and should remain in his office. The duplicate is taken by the salesman when he goes to interview the prospect and should be returned properly filled out when the interview is closed. It is used to refresh the saleman's memory concerning his prospect.

How to Organize the File

Have a steel or wooden filing cabinet with at least two sections for 4-in. by 6-in. cards. Have two sets of index cards alphabetically marked, A to Z.

How to Operate the File

A simple method of filing the cards is to keep the original and duplicate together. In order to insure efficient handling of the prospect file one person should be in charge of it. In smaller establishments this work often is done by the dealer's secretary or the telephone operator.

When the file is ready for use all information concerning prospects should be collected from old files, salesman's notebooks and every other source available and put on the cards. The prospect cards, with the duplicates attached are then placed in the file alphabetically.

Small metal signals are attached to the cards to indicate what kind of selling effort is to be applied—sales letters, calls, demonstrations, etc. If a salesman is to call on Brown, on October 15, a small metal signal is attached to the top of Brown's card at 15. Colored signals may be used to indicate calls, sales letters, literature, demonstrations, etc. Red may be used for calls, yellow for sales letters, blue for demonstrations.

The person in charge of the file runs through it each night and takes from it the duplicate cards on the prospects that are to be worked the following day. Those that are to be called upon are given to the salesmen and those that are to receive sales letters or literature are given to the proper persons. When the calls have been made and other selling efforts completed the duplicates are properly marked and returned to the file clerk who enters the information on the original cards and files the duplicates.

How to use the Prospect File to Sell THIS WINTER

Go through the file selecting the names of people who will need cars or whose businesses are prosperous this year. Direct a special campaign at these prospects using special sales letters, circulars, and calls.

Make the prospect file justify its existence. Here are some of the major uses it may be subjected to.

a—Calls.
b—Sales Letters.
c—Circulars.
d—Winter accessory sales letters.
e—Service sales letters.
f—Special vocational effort on selected lists of prospects.
g—Special enclosed car selling effort.

How to Make the Prospect File Give Sales Assistance

a—Go through the file and select the names of all persons who are connected with business that may be enjoying a particularly prosperous business. With these prospects as a target, direct an aggressive, timely, selling campaign employing special sales letters, circulars and calls.

b—Use the prospect list to sell accessories. The owners' section of your prospect list is a particularly fertile ground for accessory sales.

c—Use the prospect list for sales analysis. Every prospect list that is kept faithfully is full of valuable general information that may be made a real merchandising force.

What the Prospect File Should Tell

a—The exact status of each sale being negotiated.
b—Where and when to efficiently direct sales letters and literature.
c—Which prospects to call on each day.
d—How many prospects called on each day.
e—What sections of the territory are absorbing the product strongest—which should be analyzed to ascertain why, and the information used to strengthen the weak spots.
f—Why people buy your product—which should supply information for sales talk, advertising, sales letters, circularization, etc.
g—Why people did NOT buy—which may show fundamental weaknesses in your product, your sales organization, service department, or selling policy.
h—The efficiency of the selling force.
i—Where and when to direct resale effort.
j—How many units the dealer is likely to sell in the next sixty days.
k—How many units of each type it is reasonable to expect to sell this winter.
l—How much each salesman is selling.

ANNUAL CONVENTION AND EXHIBIT

Of the Automotive Equipment Association at Chicago, November 14-19

MONDAY Nov. 14

10 a. m.-12.30 p. m.—Opening Session of Full Membership of the Association; President's Address; Addresses by a Prominent Speaker; Commissioner's Report.
2 p. m.-6 p. m.—Business Exhibit.

TUESDAY

10 a. m.-12.30 p. m.—Divisional Meeting of Manufacturing Members.
9.30 a. m.-6 p.m.—Business Exhibit.
2 p. m.-4 p. m.—Attendance of all Members Required in Exhibit.

WEDNESDAY

10 a. m.-12.30 p. m.—Divisional Meeting of Jobbing Members.
9.30 a. m.-6 p. m.—Business Exhibit.
2 p. m.-4 p. m.—Attendance of all Members Required in Exhibit.

THURSDAY

10 a. m.-12.30 p. m.—General Session.
9.30 a. m.-6 p. m.—Business Exhibit.

FRIDAY

10 a. m.-12.30 p. m.—General Session. Adjustment.
9.30 a. m.-6 p. m.—Business Exhibit.

SATURDAY

9.30 a. m.-12 p. m.—Business Exhibit.

Are Automobile Dealers Trying to Sell?

H. W. Acason, President of Acason Motor Truck Company, Thinks They're Not

WITH men out of work and factories working, some half time and some not at all, most everything in the world is blamed as being the cause, the European situation, freight rates, banks, tight money, taxes and the weather, everything from soup to nuts.

The real difficulty is something entirely different, and Automotive Industry really needs to roll up its sleeves and take on some of the old time pep that ten years ago startled the world and made the automobile business one of the largest industries.

My own experiences during the past three or four weeks trying to buy an automobile, tabulated in the following, will show what I mean, and is, I believe, the real answer to why business is no better. In each one of these experiences, I gave my name and business card, and was conceited enough to think I might act, talk and look as good as the average prospective buyer.

Experience No 1

I visited one of the largest buildings in Detroit, and was quite enthused over a coupe, exhibited on a wonderful floor in a magnificent show-room, talked for half an hour with a well-dressed salesman, told him I was interested, came back the same evening with my wife, both looked at the car and both liked it. We asked to be allowed to ride in it and the salesman promised to drive the car over to our home which was about ten blocks away, and give us a demonstration. This was about three weeks ago, and I have heard nothing further from this salesman and I haven't been offered a demonstration.

Experience No. 2

I answered an advertisement for a used coupe, went to see it twice and liked it, took my wife with me the third time and drove the car, giving the salesman my business card and telephone number. This was some time ago, and this same car is still being advertised in the papers, and I haven't even been followed up by telephone.

Experience No. 3

I made two calls about ten days ago at one of the largest retail automobile salesrooms in Detroit and saw two different salesmen and neither one of them knew the retail price of the cars which they had for sale and each one had to go and get a book and look up the price before quoting me. Naturally all my enthusiasm disappeared when handled by a salesman who didn't even know the price of his goods. Both these salesmen have my name and address but I haven't heard from them at all.

Experience No. 4

I saw a used coupe which I thought suited me and went to the salesroom to see it and the salesman didn't even know that they had such a car for sale, let alone knowing where it was or showing it to me.

I finally ran into a man who apparently wanted to sell me something.

He had a car which he allowed me to drive as long as I wanted to, in order that I might see for myself how I liked it.

He has called me up every day for the past five or six days and he has always sent the car over to my house in order to save me going to his place.

I bought this car.

In view of business conditions at the present time, it is hardly believable that such experiences as above mentioned can be true, but they are the facts of my own experiences, and I imagine that there are hundreds of other people who could tell the same story.

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SOME SNAGS AT WOODSTOCK

THE plowing match and tractor demonstration held at Woodstock under the auspices of the Ontario Plowmen's Association and reported elsewhere in this number was, from the standpoint of attendance, interest shown in the exhibits, quality of work accomplished by both tractors and horse and number of entries, perhaps the finest demonstration of its kind ever held in Canada. The directors are to be congratulated on the whole for the manner in which the big affair was conducted, but there are flaws in the general scheme which we would bring to the attention of the Association. We refer to the tractor classes for farmers, and to the alleged contest between horses and tractors.

Take the case of the tractor contests for those engaged solely in farming. In these classes the Association required each entrant to make the following declaration:

I ..... of the County of.....in the Province, or State of .....hereby make oath and say:

1. That I have made entry in the Tractor Competitions for amateurs described in Classes 6 (in stubble) and 7 (in sod) conducted by the Ontario Plowmen's Association, and that I am a bona fide farmer residing in the township of ..... Lot ..... Concession ..... Province, or State of .....and am solely engaged in the business of farming.

2. That I have never been engaged by a manufacturer or manufacturers as their agent or demonstrator.

NAME..... ....
ADDRESS ....
WITNESS ....
Declared before me this ..... day of ..... 1921, at Woodstock, Ont.
....Notary Public.

The spirit which prompted this was commendable. The Executive desired to protect the amateur tractor operator and to eliminate the possibility of his having to compete with experts. The declaration which each entrant had to sign also forbade his being paid by the manufacturer to take part in the competition. The majority of the entrants refused to sign the affidavit with the result that a hurried meeting was called by the directors of the plowing match which ultimately resulted in the declaration being withdrawn.

There is every reason to believe that a large number of the farmers had their expenses paid by the manufacturers. And that was the chief reason why the operators refused to sign.

A competition under these conditions is of no value to anybody. An association which allows itself to be stampeded into waiving the just conditions of competition leaves itself open to ridicule. And a manufacturer, however powerful, who spends hundreds of dollars in drag-netting the country for the best plowmen and paying their expenses, knowing right well that the conditions of contest forbid it, not only is taking advantage of his competitors who abide by the rules, but is not playing the game according to all the rules of sportsmanship the world over.

The contest scheduled between the tractor and the horse was a fiasco. When the conditions of contest were made known the tractor manufacturers as a body withdrew. No tractor operator representing any manufacturers took the field. Yet when the results of the various classes were announced it was reported that the horse beat the tractor by 25 minutes of time and some points in quality. Now what we would like to know is where was the contest staged and who was the tractor operator?

The Association evidently intended to make conditions as difficult as possible for the tractor. One tractor pulling a two-furrow plow was required to compete against four teams. The manufacturers said they were willing to take part if the tractor was

Get busy on the woodpile, old man.

allowed to draw four plows, and when this was refused they withdrew.

Just why the Ontario Plowmen's Association should move heaven and earth to get as many tractors on the field as possible and then discriminate against them is difficult to see.

Single contests after all determine little, but when they are staged let us be fair and conduct them in the spirit of friendly rivalry.

ASK 'EM TO BUY

"ASK 'em to buy" is the slogan of the Automotive Equipment Association. It is a good slogan which every dealer should print big in his mind and use every minute of the day.

If you want to sell more cars, automotive equipment, tractors, trucks or farm machinery, "Ask 'em to buy." Ask them everywhere. Ask them in your garage, your salesroom, at the gasoline pump. Ask them with advertising sales letters, and door to door canvassing. Ask them to buy something which you know they need, and you have on hand to sell. Learn all you can about your product and **tell it to the other fellow. Tell it intelligently and make him hear.**

Goods of all kinds will be sold this winter. More cars will run this winter than ever before. Motorists will need cars and equipment and the dealer who asks them to buy will sell 'em.

Farmers will need tractors, dairy equipment and all kinds of implements next spring and will buy them this winter from the dealer who asks them to buy.

Forget all about the drop in farm produce and sell. Sell economy and greater production. Sell yourself and you'll sell your goods. Use your smile, it is a mighty fine salesman.

In your salesmen, in your garage, in the street and at the prospect's door, a lot of sales can be made this winter if you will use direct and intensive selling effort. **"Ask 'em to buy."**

THE SERVICE THE MANUFACTURER GIVES

NOT long ago the U. S. National Automobile Chamber of Commerce addressed to 20,000 representative motor car owners a questionnaire intended to establish the points in the car most desired by owners. The replies showed that a majority of these car users desired first of all in their vehicles, endurance. Next came economy of operation, then comfort, price of the car, appearance and manufacturer's service. This is extremely interesting from a number of angles and not the least is the relatively low position in the list given to service, which has long been almost a fetish among our manufacturers. The truth of the matter is that the average man has come to take service pretty much for granted. The average of service by our motor car companies is so high, that this vital problem can be pretty well ignored by the car buyer. No higher compliment could be paid the service departments of the car builders.

APPRECIATION OF THE TRADE PAPER

THE National Conference of Business Paper Editors met in Chicago two weeks ago and one of the important happenings was the receipt of a message of greeting from Herbert Hoover, Secretary of Commerce for the United States. Secretary Hoover knows the business paper editors, and keeps constantly in touch with them on the business problems of the country that he might tell them at first hand what his department is doing to help along the business of the country. The appreciation of the business paper contained in Secretary Hoover's telegram will be interesting to all our readers and for that reason we reproduce it here:

Pressure of official duties makes it impossible for me to address the members of the National Editorial Conference in Chicago, as I should like to do. I have appreciated the opportunity given me in the monthly meetings we have held together in Washington to express the policies of the Department of Commerce with regard to some of the pressing industrial questions before us. We have indeed great problems yet to solve.

I cannot but feel that if these problems are considered as human and not as material questions, we can find their solution. We are dealing with questions of railways, of farms, of shops and of instruments of commerce and industry, but in the background of every person's mind there is the fact that we are dealing not with mechanical things but that we are concerned with the problems of men, women and children.

There must be in our discussions of those matters the dominating thought that the better control of economic forces is in fact simply the better comfort of the country. Those several organizations within the Department of Commerce which we have developed and set at work within the past few months are concerned in this spirit, and it is a fine augury of our industrial future to know that the programs and purposes of these various departmental activities have come from our manufacturers, merchants and engineers themselves.

The editors of the business press have shown a fine spirit of service. Your opportunity for leadership is unique and unchallenged. Upon you rests in large measure the responsibility of the control of industrial thought and opinion in the detail of the industrial, economic and technical problems which confront us. I wish your conference every success in carrying forward your high and constructive purposes.

HERBERT HOOVER.

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Taking Trouble Out of Ignition System

The Ignition System Requires Careful Handling in Winter. Dealers Should Study This Article Carefully. By So Doing Additional Business May Result

By L. G. HEIMPEL

THERE are plenty of service men who are able to detect trouble immediately when it occurs in the particular car or tractor with which they are familiar. But when face to face with an unfamiliar electric system they are at a loss as to how to trace electric trouble to its source. This kind of expert is one who has been "brought up," so to speak, on one particular kind of system, with which experience has made him very familiar. He is the man who has no use for books, and who, naturally, has not studied the available information on the subject.

To become an all-round expert on ignition it is absolutely essential to study the principles of:

(1) Current production.
(2) Induced currents.
(3) Distribution systems.

Practically all tractors on the market at present use high tension ignition systems or spark-plug ignition. Low tension ignition or make-and-break ignitors are used only on some stationary and a

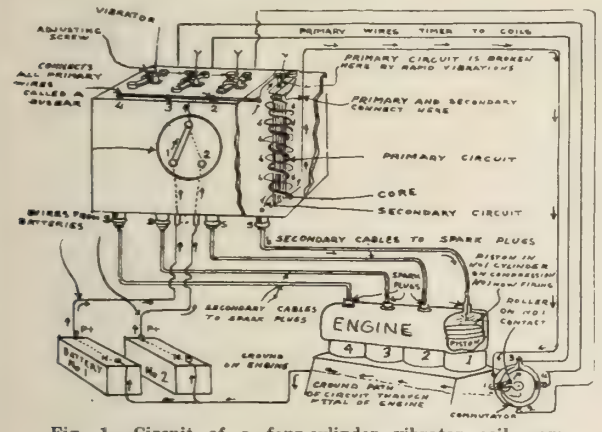


Fig. 1.—Circuit of a four-cylinder vibrator coil, commutator and storage battery ignition system. This illustration will explain the wiring connection from the battery, through the entire coil, commutator, etc.

few marine engines. The make-and-break ignitor is not efficient at high engine speeds such as are common to multi-cylinder motors. Furthermore, owing to its having many moving parts, one of which is an electrode which operates through the cylinder wall, the ignitor is a source of continual trouble on high-speed motors. High tension ignition only will, therefore, be treated in this article.

Two Kinds of Current and Two Separate Systems in All High Tension Ignition Systems

The current which is produced by the generator in an automobile and which is fed into the storage battery, and that current which flows through the wires leading to the spark-plugs, are two different currents. Trouble shorting in ignition is first of all, a diagnosis as to which of the two currents has gone wrong. It is true that the high tension or spark-plug current is dependent on the low tension system for its production, yet there may be trouble in the high tension circuit which will prevent a current at the plug when the low tension system is in perfect working order. To diagnose any trouble, intelligently, then, these two electric systems in one, must be thoroughly understoond.

Every system has somewhere in its make-up a source of current. In autos and a few tractors this source is the storage battery from which the current flows into the timer or commutator, through the low tension winding of the ignition coil and back again to the battery. Tracing the path of the current in Fig. 1, it can be followed from the battery to the switch, to the primary winding of the coil, to insulated contact on the timer, through the roller and contact arm to the shaft and metal of the engine, through the ground wire to the battery. It will be seen that the low tension, or primary wire or the battery circuit is a separate circuit and at no point touches the wire leading to the plugs.

How then is the high tension current created? By the process of induction.

Fig. 1 shows a second circuit leading from the ground on the engine to the coil, where it is wrapped outside of and around the primary winding, then to the central electrode of the spark-plug, down through the plug, across the air-gap, where it causes a spark, to the metal of the engine and back to the ground wire. The current flowing through this wire is an induced current the cause of which is as follows:

When a low-tension current of electricity flowing through the primary winding on the core of the coil is suddenly checked by breaking the circuit, an instantaneous excitation takes place in the secondary winding around the core of the coil, causing an induced current to flow through this winding. This induced current is of very high voltage which is needed to jump the air gap at the plug points. The low voltage current from the battery is usually a six or twelve volt current while the secondary or induced current is forced through its circuit by a pressure of about 25,000 volts.

It is peculiar that it is only while the flow of current through the primary winding is being checked, that this induced current is produced. If the battery current is allowed to flow peaceably through the primary winding no current will be induced in the secondary or spark-plug wire. This gives rise to the necessity of a circuit-breaker, some device for causing that break in the primary circuit.

Circuit-breaking devices are of two kinds, magnetic and mechanical. On Fig. 1 is illustrated the magnetic type of circuit breaker, known as the vibrator or buzzer of an induction coil. In this device the primary current is employed to open and close the circuit for itself by means of an electro-magnet, the action of which is as follows:

When the switch on the positive wire from the battery is closed, current flows through the switch, through the buzz bar to contact screw, which is in contact with the vibrator blade, on through the blade and around through the heavy wire of the primary winding wrapped around the core. This causes the core to become a magnet which attracts the iron block on the vibrator blade, pulling the blade away from the contact and breaking the circuit. This de-magnetizes the core, which allows the vibrator blade of spring steel, to pull the block away from the core, again making contact with the contact screw, which opens the circuit and allows the current to flow again, magnetizing the core, only to have the circuit broken as soon as the blade is pulled away from the contact screw by the magnetized core. The making and breaking of the circuit by the vibrator is very rapid, so rapid that the vibrator makes a buzzing noise. At each break, a high tension current is sent along the high tension wire to the plug, causing a series of hot blue sparks, as long as the timer holds the primary circuit closed.

Such is the action of the induction coil in which the primary circuit is made and broken by an electro-magnetic vibrator or buzzer. This form of vibrator is used on some stationary gas engines, on many marine two cycle motors, and on the Ford car and Fordson Tractor.

Fig. 2 shows a four cylinder motor wired for the use of such a system. The source of current for this system is a pair of batteries, the switch on the coil box being of such a nature that the current can be drawn from either battery at will. The wiring would be the same for a system with a low tension magneto and battery system, only that the wire from No. 2 battery, would lead from the magneto terminal instead. The low tension or primary circuit can be traced from positive or + terminal on No. 1 battery, along the wire to the coil box, along the dotted line to the switch, then to the "busbar" which carries the current to the contact screw of all the coils, from the contact screw though the points of the screw and vibrator blade to the primary winding of the primary coil for No. 1 cylinder. This winding leaves the coil box and can be traced to the commutator or timer on the front of the motor.

The commutator roller is shown to be in contact with segment and terminal No. 1, to which we have traced the current. The current flows through the roller, through the metal of the engine base, to the ground connection of the ground wire from the other end of the battery. As long as the roller remains on contact No. 1, the vibrator of coil No. 1, will keep "buzzing" and making and breaking the circuit which induces a high tension current in the secondary coil shown in the cut, one end of which leads to the plug on No. 1 cylinder which is shown to be firing. The completion of the secondary circuit can be traced by following up the secondary wire (the thin line around the core of No. 1 coil) to the point where it is connected to the primary lead to the commutator. The primary of No. 1 coil acts as a ground wire for the secondary circuit. This allows the secondary current to travel from the coil to the plug where it jumps the air gap to get to the metal of the engine, through the metal of the engine to the commutator roller and back through No. 1. wire to the other end of the secondary winding of No. 1 coil.

The commutator has four insulated terminals marked 1, 2, 3, 4, in the diagram. From each of these terminals a wire goes to a corresponding terminal on a coil in the coil box. The current cannot flow from the battery to the commutator unless the commutator roller, which rotates inside the commutator case is in contact with one of these insulated terminals as it is shown to be in Fig. I

Summing up the action of such systems, there are four cylinders each of which requires a spark every other revolution of the crank shaft This means there will be two explosions or power impulses for each revolution of the crank shaft. The commutator in order to send the two required sparks per revolution of the engine crank shaft must turn at half crank-shaft speed, this is accomplished by driving the commutator from the cam-shaft which runs at half crank-shaft speed. The batteries are ready to send current along the primary circuit by any available path. The commutator is the device which controls the paths along which currents can flow. By making contact with terminals in their proper order the induction coils are enabled to send a high tension current to the plugs of the different cylinders whenever it is needed.

Trouble Shooting in a Vibrator Coil System

Today the average person can detect a missing cylinder the moment the trouble develops, though there are yet plenty of drivers have not developed a sufficiently musical ear to do so. Once an engine is missing the next move is to find out in which

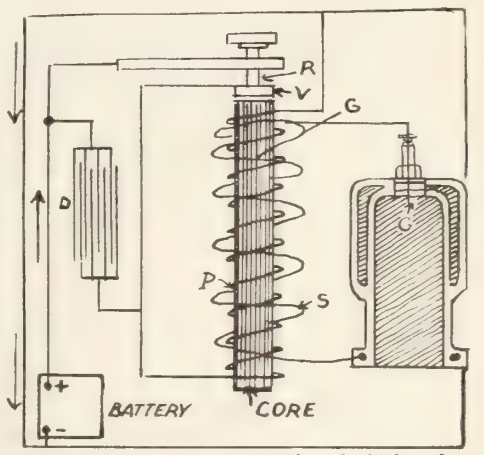


Fig. 2.—How the condenser is wired in the system of a jump spark or high tension coil. D, condenser; P, primary wire circuit; S,secondary wire circuit; G, spark plug; V, vibrator spring; R, vibrator adjusting screw.

cylinder the trouble is located. A regular miss is almost always caused by spark trouble, viz., trouble somewhere in the ignition system.

The first step is the location of the missing cylinder. The most reliable way is, to first start the engine and with the throttle open so that the engine runs about 800 R. P. M., short circuit three of the cylinders by holding a wooden-handled screw driver against the top of the plugs while the point of the screw-driver touches the metal of the engine.

Two cylinders, say numbers one and two may be shorted with each other; that is a screw-driver may be laid over the ends of the plugs and cylinder number three may be shorted to the cylinder block with another screwdriver. This makes the fourth cylinder drive the whole engine; if it does, then the trouble is not there. Now short number four and make the third cylinder turn the engine over, and so on until the missing cylinder is discovered by elimination.

This discovered, the next thing is to locate the cause. Remove the high tension terminal from the plug and start the engine. Hold the terminal about an eighth of an inch from the plug top on the metal of the engine, and if the current is seen to jump from the terminal to the engine it means the current is there, but, that it has found an easier path home than by jumping the air-gap at the points of the plug, which is another way of saying the plug is short-circuited or "shorted" as the saying is. Changing the plug or the porcelain will usually remedy this trouble. If upon trial it does not correct the trouble there is the possibility that the spark, seen at the outside of the plug is not strong enough to jump the gap under compression, but this is not likely to be the case.

If however the spark does not appear when the terminal of the high tension lead is held close to the engine with the engine running, it means that the spark is not reaching the plug, and trouble must be looked for elsewhere. The most likely spot is the commutator or the wire to it, then the coil. The coils may be interchanged and if a coil in good running order fails to send a spark to the high tension terminal of the missing cylinder, then it is questionable whether any primary or low tension current is reaching the coil.

If the other coils were working properly, there is no trouble with the source of the current whether it be a low tension magneto, as in a Ford car or a battery. The trouble must be between the coil box and the commutator, most likely a loose connection, a broken wire or possibly a poor connection in the commutator. A close inspection or replacing the questionable wire with another will locate the cause.

If the only source of current is a low tension magneto as in the Ford without battery, it will make testing of the system much easier to attach four or five dry cells to the coil box terminal. These are especially valuable in testing and adjusting vibrators.

Excessive sparking at the points of a vibrator generally means a broken down condenser This is a device of leaves of lead foil, laid alternately on each other, but insulated from each other by paraffin paper. Every other sheet of lead foil is connected by a wire to one of the leads running from the battery to the contact screw on the coil, while the remaining sheets are similarly joined and connected to the wire near the vibrator blade. When the circuit is broken by the vibrator there is a strong effort by the current to jump the air gap made by the break. This effort causes a spark at the vibrator points but with the condenser the current spreads itself over the plates of lead foil preventing sparking at the points. If the insulation in the condensor is broken or burned, sparks will be seen at the vibrator with the result that the contact points of the vibrator will likely be burned. To repair these coils is a job for the factory, not for the ordinary shop. Besides the price of a new coil is low enough to make the purchaser of a new coil the cheapest method of replacing a burned out coil. The condenser is shown in Fig. 2.

Keep Busy This Winter by Selling Power Washers

NUMEROUS dealers are making a good profit from the sale of power washers. There are others who could feature them advantageously. There are many reasons why the demand for this equipment will continue to develop. When power washers are systematically advertised, displayed and demonstrated, the stock moves rapidly— enabling the dealer to add to his net profits at a satisfactory rate. It is dead stock which causes implement stores to suffer a premature burial. A line of power washers will not prove dead stock. A dealer can concentrate his efforts on the sale of power washers with every assurance of success.

The rapidity with which a stock of power washers will move depends upon the sales tactics employed by the dealer. It is a mistake to store the machines in out of the way corners where customers will not see them save by accident. It is a mistake to decide that the local demand for this equipment isn't heavy enough to warrant the expenditure of time and energy necessitated by a vigorous advertising and demonstrating campaign. Thousands of farm families are in need of power washers. The dealer may consider each housewife in his territory a prospective buyer of a power washer unless she is already equipped. It is well to keep in mind the fact that power washers are real necessities. They are not fads. They cannot be classed as luxuries. The power washer is as essential a part of the house wife's equipment, as the binder mowing machine, etc., is to the busy farmer's battery of machines.

Advertising, Display and Demonstration

Bringing his power washers to the attention of house wives is an interesting part of the implement dealer's activities. Advertising, display and demonstrations are the tools he requires for building a profitable sales campaign. Advertising will start the ball rolling. There are various ways in which the dealer may give publicity to his line of washers. Newspaper advertising proves of value. The power washer is an interesting machine to advertise, as it combines so many points of merit in its design and construction that compelling copy is easily prepared. The following facts are of interest to prospective buyers of power washers, and should be mentioned in the dealer's advertising; the washer and wringer drive; platform; the tub; the wringer; the washing machine head; the machinery; castings; finish and safeness. Explain that the washer and wringer drive never slip, and there is no upward strain on the gearing at the head of the machine. Mention the fact that the drive handles heavy carpet and clothing in washing machine and wringer as easily as the finer pieces of clothing. Explain that the solid platform is rigid, long lasting and will hold its finish, and that the tub is built of material which is not subject to weather changes, and will give long service. A long-lasting washing machine head is essential if the customer is to receive profitable service from her investment. Advise readers of your advertisements that the power washers you sell are equipped with heads which run freely, reverse without jerking, and do not stop working at an inopportune time.

A series of short, snappy advertisements which describe the merits of the power washer in detail will bring business to the implement store. A series of educational ads which show how the machines are designed and constructed can be supplemented with other copy which invites interested parties to visit the store and witness actual demonstrations which will prove to their satisfaction that the power washer is the most satisfactory equipment for handling the home laundry.

When advertising power washers it is desirable to keep a list of the names of prospective customers, and supply them with booklets describing the machines in detail.

YOU CAN SELL

Power Washers this winter because they are real necessities.

Because there is a real demand for them in your territory.

Because every household in your town holds a prospect.

Because they make Christmas gifts.

YOU SHOULD SELL

1—To increase winter revenue.

2—To keep yourself and salesmen busy.

3—To get in touch with new prospects.

Booklets of this nature (furnished by manufacturers) are of value in educating house wives to the need of installing modern equipment so Blue Monday will be robbed of its terrors.

Special Demonstrations.

Power washers readily lend themselves to demonstration. A machine in operation always attracts more attention than when standing idle. There are various ways in which successful washing machine demonstrations may be conducted. Where the dealer wishes to speed up the power washer demand without delay, it is advisable to plan a special demonstration of the machines and to advertise the event so a large audience will be assured. Show how quickly and easily the machines will clean dirty clothes. Remember that the house wife's sole interest in the power washer is centered on its ability to clean soiled clothing quickly and easily. This is why it pays to do an actual washing and show prospective customers that your machines are built for business.

When demonstrating a power washer, be prepared to answer questions. Also take pains to point out the good points of the machine. Factors which should interest your prospective customers include durability and operating cost. Show interested parties that the washers you sell are durable because they are built heavy enough to stand up under hard and continued work. A power washer could not last any length of time if any of the important working parts were built too weak, or the entire machine was not properly designed. Advise prospective customers that the best power washer is the cheapest.

"When demonstrating a washer, I show the interested party that the wringer may be run independent of the machine, or at the same time the machine is running. This is an attractive feature in the eyes of the busy house wife.

"Occasionally the prospective customer will state that she would enjoy using a power washer; but cannot afford to buy an outfit. Then I get busy and show her why she cannot afford to dispense with the services of such an economical machine. As a general rule she decides that her time is worth more than two cents per hour, to say nothing of the hard labor which the use of a power washer eliminates. And when the customer views the proposition in a sensible light, she must decide that the initial cost of a power washer is moderate, considering the work it performs.

"I find the sale of power washers is an interesting, profitable part of the implement business. I believe the house wife needs modern labor saving equipment and there is nothing she can buy which will take the place of a power washer. There are prospective customers everywhere. The majority of house wives prefer to do their own washing, or at least have it done in their own homes. To this large class the modern power washer is a necessity. Wherever installed, it completes the laundry equipment of the home. Through the use of power washers, many house wives cut their wash bills more than half.

"The versatility of the power washer in cleaning any kind of clothing from heavy overalls and jumpers to flimsy fabrics is of interest to prospective customers. I take pains to show customers that the power washer gives the kind of all around service required in the home laundry."

Window Displays

A dealer who has sold power washers for several years explains that he favors window displays. "There is always a chance to attract the attention of prospective customers through window displays," he explained. "A power washer in operation in a show window will attract a crowd and some of the on-lookers are likely to become customers. A few advertising placards are helpful. Such slogans as : Avoid Blue Monday; Cut Wash Day to A Wash Hour; This Machine Will Wash Your Clothes For Two Cents Per Hour, etc, etc., assist in creating the buying impulse in the minds of house wives.

"After a lady has handled a washing with the aid of a power washer, she is not apt to dispense with the machine! This is why I plan my sales campaigns with the view of locating house wives who are willing to give power washers a trial. I tell them that the machines must make good, and encourage them to give power washer service a fair trial. A power washer sells itself when given the opportunity."

Advise buyers of power washers to keep their machines under cover when not in use. Show them why thorough lubrication of machinery is essential.

GETTING READY FOR MOTOR SHOW

THE first Canadian Motor Show to be announced for the coming winter season is the National Motor Show of Western Ontario to be held in London, Ont., from Jan. 30 to Feb. 4, inclusive, and this show will cover the entire western districts of Ontario. Two large buildings have been obtained and one will be devoted to passenger cars and the other to commercial cars and accessories. The show will be held under the auspices of the Automobile Retailers Association and great enthusiasm is being shown over the coming drawing for spaces. T. C. Kirby of Montreal has been engaged as show manager and his experiences in putting on motor shows will assure the many details being handled with every possible assurance of success. The show committee appointed by the dealers are:—Wilfred Hodgins, President; Frank McLachlin, Secretary; Tom Terry, Treasurer, with Jack Breemer and Jack McLaughlin as directors.

DUNLOP, INVENTOR OF PNEUMATIC TIRE, IS DEAD

LONDON, Eng.—John Boyd Dunlop, inventor of the pneumatic tire and revolutionizer thereby of road transport, died at his home in Dublin lately aged 82. Mr. Dunlop was born in Ayrshire, Scotland. He went to Dublin to practice as a veterinary surgeon.

The circumstances under which he invented the pneumatic tire were romantic. His mother was an invalid who could only be taken about in a bath chair and she suffered greatly from the jarring of iron-rimmed wheels.

Mr. Dunlop first tried solid rubber bands on the wheels, but as his mother's illness became worse, he fastened pieces of inflated rubber tubing, with sealed ends, around the rims. This gave the invalid great relief, and Mr. Dunlop gradually improved the tire until friends advised him to patent it. This he did, and it was first used on a bicycle by Ducros brothers, then the leading cycle track racing men, using solid tires on the old boneshaker.

England used the first pneumatic tires, though grotesque in appearance. The "pudding tires" excited laughter, but they got such increased speed that they scooped the pool at all cycle meets. Mr. Dunlop and the Ducros Company soon floated a pneumatic tire, making great fortunes for themselves and friends but after several expansions the company became overcapitalized and has paid no dividend this half year.

Mr. Dunlop was a tall stylish-looking man, with a long grey beard. Recently he brought suit against a well-known whisky firm for using his photograph as a poster advertisement for their brand, implying that his hale appearance was due to drinking their whisky.

ON THE TRACK OF THE ACCESSORY THIEF

THE continued enquiry and investigation now being made by the officials of the Montreal Motorists League into the buying and selling of stolen automobile accessories is causing a wide stir among certain districts. Secretary T. C. Kirby has secured a lot of confidential evidence and it is now well known where the petty sneak theives dispose of all their stolen property. Motor-meters are bought from the thieves for 75 cents each, while the prices vary for tires, spot-lights, etc., etc. A very strict watch is being kept and the evidence being piled up all ready for charges to be made as arrests are expected any minute. The insurance companies are being appealed to by Mr. T. C. Kirby to lend a hand in these prosecutions, as they are all most directly and financially interested. A special meeting of representatives of all the automobile insurance companies is being called to discuss the matter.

GARY MOTOR TRUCK CO. BUYS CHASE FACTORY

THE Gary Motor Truck Co. of Gary, Indiana, with a Canadian charter for the establishment of a branch in Canada to be known as the Gary Motor Truck Co. of Canada Limited, with a capitalization of $4,500,000, have purchased the property and all the assets of the Chase Tractor Corporation, Atlantic Ave., Toronto, Ont., for about $1,400,000. The value placed on the real estate in the deal is $750,000, the property consisting of 4½ acres of ground and 75,000 square feet of space in the buildings.

The new company will manufacture a full line of worm-drive motor trucks and Chase tractors, and in the deal have taken over all assets and liabilities of the Chase Company. Theo. B. W. Zumstein, who was formerly vice-president and sales manager of the American company, will be the president and general manager of the Canadian concern.

HART-PARR SALES CONVENTION

ALL the divisional sales managers of the Hart-Parr Co., Charles City, Ia., met at the factory Oct. 1 for a four day sales conference. All territories of the United States and Canada were represented. Sales policies for 1922 were decided, new contracts approved, and plans laid for an immediate drive for business.

This meeting was one of the most enthusiastic ever held at the Hart-Parr factory. Reports from the field men show that trade conditions are gradually improving in practically all territories. One of the most encouraging features was the unanimous report from all parts of this country of the increased interest of farmers in tractors. The farmer is no longer questioning the power-farming idea. Reports from the entire field showed that the dealers' floors had been practically cleaned of tractors.

Plans for owners' service schools in all parts of the territory were formulated.

INFERIOR BINDER TWINE ON PRAIRIES

WINNIPEG—Large quantities of inferior binder twine are said to be coming into Western Canada from south of the line. The authorities turned back one hundred thousand pounds in the week according to reports because it did not comply with the standard which calls for five hundred and fifty feet smooth twine devoid of knots to the ball, fifty pounds to the sack. This particular shipment was prison made, but was rejected because it was inferior. The harvest is concluded in the United States when Canada's is still on and it is said they ship the surplus here, especially the inferior grades, for which the standard price is charged.

PIERCE-ARROW'S ORDERS IN SATISFACTORY VOLUME

NEW YORK. — Pierce-Arrow preferred was a strong spot in to-day's market, advancing more than a point. Charles Clifton, Chairman of the company, says unfilled orders will keep the plant operating until December 1, and that the factory is running full time with 4,300 workers. Prospects are that this force will be increased in the next six months. "Our situation indicates decided improvements," says the chairman. "Our orders represent healthy day-by-day increases which show no sign of letting up. We are confident Jan. 1 will find the company with sufficient orders to operate 60 to 90 days ahead. In September we shipped double the number of trucks than in any other month this year."

MADE IN CANADA
International

Trade will be greatly stimulated by a little effort on the dealer's part, now that farm implement prices have been reduced.

Our new and lower prices on farm machines have just been issued and are being widely circulated to the farming public. Farm implements for less money has been a live topic where farmers gather. Everywhere they have waited for lower prices—and now they are here.

Lower prices now in effect are opening a new field closed to you this past year because of high prices.

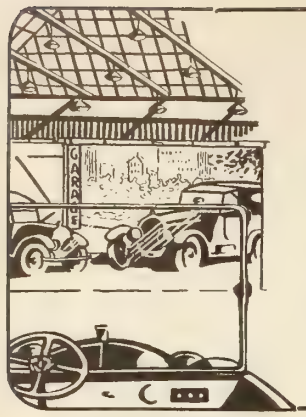
In addition to last year's market, made up largely of sales forced by necessity, you have another and larger replacement market, because lower prices will make it unprofitable to spend large sums for repairing worn-out machines. In addition, in the coming year you should have a large field for the sale of new machines which thousands of farmers have never owned and have postponed buying until a more favorable time. Lower prices on the newer lines are bound to bring many farmers to the purchasing point for much of this new equipment.

Adopt a definite, aggressive policy. Line up all your prospects. See to it that worn-out machines among your customers are abandoned. Show each man how waste and loss follow where inadequate equipment is in use. Show him the efficient new machines that will replace the old—at lower prices.

Start now. Don't wait until January 1st. The man who starts now and works aggressively will uncover the largest volume of business from the big market opened up by our lower prices.

INTERNATIONAL HARVESTER COMPANY
OF CANADA LTD
HAMILTON CANADA

EASTERN BRANCHES—Hamilton, London, Ottawa, Ont., Montreal, Quebec, Que., St. John, N. B.
WESTERN BRANCHES—Brandon, Winnipeg, Man., Calgary, Edmonton, Lethbridge, Alta., Estevan, N. Battleford, Regina, Saskatoon, Yorkton, Sask.



SHOP NOTES FOR THE GARAGE MAN

Some Unusual Repair Jobs and Hints On Repair Shop Practice

ONE of our men solicited a job from the city fire department that added considerably to our reputation. It seems that the Excelsiors had a motor apparatus that had proven itself a "lemon" and the city treasurer was getting used to paying twenty and thirty-dollar checks every time the machine left the house. It was always engine, or clutch, or transmission trouble, or sometimes a cracked case, at others a stuck bearing, and again just a clutch bushing or a universal pin. They had tried all sorts of lubricating schemes, bought a dozen advertised improvements, and realigned the parts several times; the general verdict was that the assembly was out of line and couldn't be kept in line. Engine and transmission were mounted on a sub-frame of heavy channels that extended back to the jack shaft—6-inch channels inside the frame of 8-inch channels.

A driver's chance remark gave our machinist the clew that ultimately saved the city all those repair bills. "If one of those front wheels is up four inches, I can't push the clutch out." The machinist pondered on this, and the next time he was in the fire house he took occasion to look over the mechanism. He noted that there were two universal joints in the line, each of which was fixed longitudinally. He reasoned that the frame, though seemingly heavy, must weave to some extent when the car was on an uneven surface and that this must put severe stresses in the line of action between the engine in front and the transmission, back with the jack shaft. Here was an unbroken line of steel between two fixed points. If these two points remained fixed with only an imaginary line between them, the length of the latter must necessarily change with a weave in the frame. Explaining this reasoning to the fire chief, permission was obtained to change one of the universals to a sliding type which would allow the imaginary centre line to change as per conditions. All the troubles in the major units concerned automatically ceased with the change.

Retapping Holes in Aluminum Cases

One thing peculiar to automobile repairs is the work on aluminum cases. The repairman is frequently called upon to retap holes in these cases, either for screws or studs—holes in which the threads have become badly worn. In every case, these retapped holes should be made U.S. standard threads and not S.A.E. threads. Aluminum and its compositions are so soft and granular that it is difficult to tap holes and get even as good threads as in cast iron; so when the thread in aluminum is made it is usually somewhat ragged —now, if a roughly threaded bolt is run in this hole, the strength is lessened again and by the time a full load is applied to the part a few times the thread in the case strips entirely. To get more wearing surface in the soft metal, coarser threads are used and these hold very well if properly fitted.

Care of Twist Drills

The twist drill stands up under more abuse than any other small tool in the shop. And when used in electric or hand breast drills, they are most severely tried, due to the carelessness of the workman in holding and forcing the drill. When in a drilling machine, the drill is maintained in a fixed centre line of action but the ordinary workman's centre line may swing fifteen degrees to the east and west, all in making the same hole. That the number of drills broken on such work is not doubled speaks more for the quality of those tools than for the skill of the workmen. One shop follows the practice of saving broken drills; these are sorted and reground, then made up into complete sets just as new drills are kept. These short drills are issued for portable electric drill work and no others are allowed in these electrics. They work fully as well, and the saving effected has been remarkable.

Sometimes the slots in a castellated nut do not line up with the hole in the bolt—the slot ahead makes the fit too tight, the slot behind makes it too loose. If the nut is removed and its face treated to a few passes with a good file, it will be thinned enough to allow the cotter to enter the slot head. The satisfaction from well doing is sufficient reward for the effort involved, even if a person was not interested in doing a first-class job.

Rush Job Fiend

The shop that goes after automobile work is sure to encounter the rush-job fiend. It is a very strange thing that a man will arrange for a sitting with his dentist weeks ahead, he will cheerfully bargain with the plumber or the carpenter to do some repairs to his house "next week," and he willingly agrees to have that ton of coal he needs so badly brought around as soon as the roads are broken—but when it comes to a repair job on his automobile, he has got to have it started inside of ten minutes. If he can't get that, he hollers as though he were being robbed and he regales his friends with the news that "there ought to be at least one shop in this town where you could get a job done promptly and not get soaked for it." This rush-job man is an unprofitable customer for any shop. Learn to distinguish between a bona fide hurry job and one that is not—then, let the man who is fooling you wait his turn and do not depart from this rule.

Workmen, and others, are apt to judge a car's braking power by the size of the drums. As a matter of fact, size has nothing to do with it—pressure perpendicular to the surface of the drum is what counts. This pressure remaining the same, an increase in drum size means longer life for the drum and the linings.

Overcoming a Difficulty

A fellow came in the shop one day for a little work on his car which involved our going out and looking under the hood for a measurement. In so doing, we noticed an unfamiliar wire running from the radiator and another from the crank case; both led up to the dash. Asked what these were, the owner replied, "You see, the car is an old one and has no dash oil indicator and no motometer. I have to get out and look to be sure my oil and water are high enough. Well, I borrowed the idea from our farm lighting system which has a cut out switch that stops the ignition when either the oil or the water gets low. It works all right and I like to fuss with those things even though I don't expect to depend on them to tell me when my engine is in danger." There are a good many people driving cars who know little else than how to press the starter button and fill the gas tank and who would profit immensely if such a device were made part of the car in the beginning.

Building Goodwill Now

The motoring public now looks for more careful workmanship in the garage and expects greater attention to details. Machinists should play up to this. One way is by being careful of the finish of any car they are working on. If working on the engine, for instance, a cloth should be spread over the fender and adjacent section of the running board—then when greasy tools or bolts are laid down on these parts, scratches and grease spots are avoided; a wrench that slips is guarded from the customary result of scraping off a generous portion of paint. Another paint protector is the leather topped jack; half an hour spent in riveting a piece of old belt to the top will prevent scraping the paint off axles and rods and the nickel from hub caps.

Salvaging a Bronze Bushing

Bronze bushings for automobile work usually have a relatively thin wall. This fact, plus a little trick, will often help out when there is no supply of bronze to draw from and a bushing is needed in a hurry. Suppose a bushing is wanted for a shaft that has been worn and ground true again, making it a few thousandths under size and the only bushing or blank available is one piece that already has been reamed to the nearest sixteenth above—how can that blank be reclaimed?

Turn the outside diameter to, say, ten thousandths over some standard size—then drill and ream a hole in a piece of cast iron to that standard size. Scrape or countersink one end of the hole bell-mouthed and file one end of the bronze a little tapered so it will enter the hole. Put oil on the outside and force the bushing through in an arbor press or a vise. It will be found that the interior of the bushing is smaller by about two-thirds the amount that was left on the outside of it. There is a limit to this process but if there is material enough on the outside, the bushing may be further compressed by successive forcing through smaller holes. And a bushing that has been spoiled by boring it too large may be salvaged in a similar manner.

Gooseneck Screw Straightening Press

One of the most useful tools for automobile work, and in fact for general repairs, is the gooseneck style of screw straightening press. The conventional arbor press and the heavier two-post style of press are found in all shops but for straightening shafts both of these are outclassed by the third type referred to. This tool, which does not seem to be very well known, has an open side facing the workman with a rather long flat bed extending from right to left. On this bed are placed the fulcrum blocks, adjusted to suit the bend under repairs, and directly above the bend is the screw for forcing the piece back to straightness. Centres, adjustable along a convenient rod, are provided for testing the piece without the workman leaving his position. The screw is fitted with a hand wheel for quick movement and a bar for powerful impression while graduations on the wheel enable one to gauge the amount of pressure applied for successive trials on a stubborn piece. Every shop that does auto work should make or buy a press of this type.

NEW GILL PISTON RING DIRECTORY

A MOST complete and authentic piston ring size directory has just been issued by the Brown Engineering Corporation, Canadian manufacturers of Gill piston rings, for the convenience of the trade.

The purpose of this book the manufacturers states, is to simplify the sale of piston rings by means of a single, compact volume containing the piston ring size data of the entire automotive industry. To this end every make of automobile, truck tractor, and aeroplane manufactured has been cataloged as far as possible, with a tabulation of past and present models, number of cylinders, piston rings, and the piston ring sizes required for each. Stationary and marine engines are included.

Copies can be secured without charge from the Brown Engineering, Corp., Toronto, Ont.

TRACTOR POINTERS

NEVER race the motor.

Don't measure the depth of gasoline with a dirty stick.

Don't let the tractor get to squeaking—keep it up tight.

By keeping plowshares sharp you will save a great deal of fuel.

Don't overload, don't overlook lubrication, don't neglect needed repairs.

Don't use common black oil on small bearings. Such oil is not suited to the purpose.

Don't expect the seeming impossible of your tractor as you will be bound to be disapointed.

Many a tractor operator thinks he is the whole cheese when in reality he is only a piece of one.

Don't drive with a slipping clutch. Study its construction and master the methods of its adjustment.

No matter how busy he thinks he is, the successful operator is never too busy to keep his bearings tight.

COCKSHUTT IMPLEMENTS

Make Record Showing at Woodstock

THOUSANDS of farmers saw the work done at the International Plowing Match recently held at Woodstock. The best plowmen in the country competed there for honors in the different classes. Read the splendid record of Cockshutt Plows.

Tractor Competition in Stubble
Thursday, October 20th

Open to those solely engaged in farming.

First Prize — C. W. Clubine (Oak Ridge) — Cockshutt Plow (Samson Tractor)

Second Prize — E. McCuaig (Walkerville) — M.-H. Plow (Samson Tractor)

Third Prize — D. M. Campbell (Alvinston) — Cockshutt Plow (Samson Tractor)

Fourth Prize — F. Yeomans (Agincourt) — Cockshutt Plow (Case Tractor)

Fifth Prize — M. Tyndall (Seaforth) — Cockshutt Plow (Imperial Tractor)

Tractor Competition in Sod
Friday, October 21st

Open to those solely engaged in farming.

First Prize — H. Ferguson (Cottam) — Cockshutt Plow (Case Tractor)

Second Prize — C. W. Clubine (Oak Ridge) — Cockshutt Plow (Samson Tractor)

Third Prize — F. Yeomans (Agincourt) — Cockshutt Plow (Case Tractor)

Fourth Prize — J. R. McVicar — Cockshutt Plow (Samson Tractor)

Fifth Prize — Norman King — Cockshutt Plow (Samson Tractor)

Gold Medal Class for Tractor Experts

Medal won by F. G. Sinclair with Cockshutt Plow.
Cockshutt Plows also won 2nd, 3rd, 4th and 5th places in this class.

Championship in Stubble Plowing with Single Furrow Plow was won with a Cockshutt "Punch" Plow.

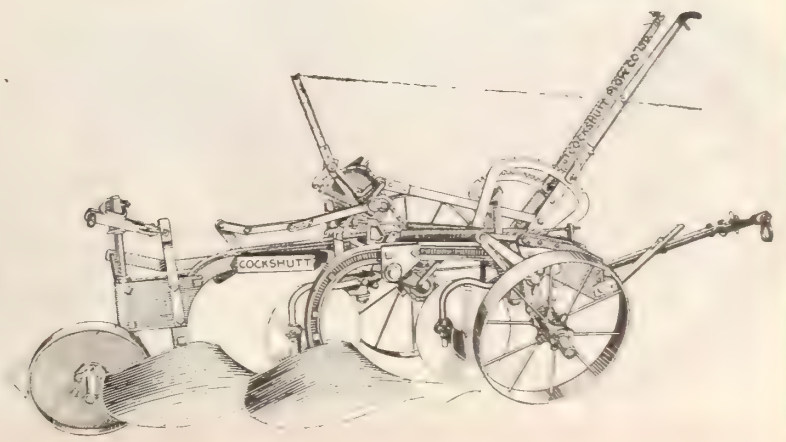
Championship for Riding Gang Plows was won by a Cockshutt "Beaver" Gang.

For good work and long service the Cockshutt has no equal. Write us today for particulars about agency. New prices now in effect on all lines.

Cockshutt Plow Co., Limited
BRANTFORD, ONT.

Sold in Eastern Ontario, Quebec and Maritime Provinces by

The Frost & Wood Co., Limited
Montreal SMITHS FALLS St. John



Whitney TRACTOR

ON the first day of next month the curtain will be raised on the most significant event in tractor history---the announcement of the new price on the Whitney Tractor. It is a price based on huge production---a price that ***absolutely shatters all former standards of tractor value.***

Brief Specifications

Power—9 H. P. on drawbar; 18 H. P. on belt.

Dimensions — Length, 123"; width 56"; height, 58."

Weight — Domestic shipping, 3,000 lbs. Boxed for export, 3,900 lbs.

Transmission:—Selective, 3 forward—1¾, 2½ and 4 miles per hour. Reverse 2 M. P. H. All gears forged steel cut and hardened running in oil.

Motor—2 Cylinder opposed type 5½" bore, 6½" stroke, 750 rev. per minute.

Governor — Whitney Special flyball type. Inclosed, gear driven.

Pulley—Direct, driven from crankshaft. Size 11" dia. by 6¾" face. Clutch controlled. Pulley regular equipment.

Fenders—Pressed steel over rear wheels.Regular equipment.

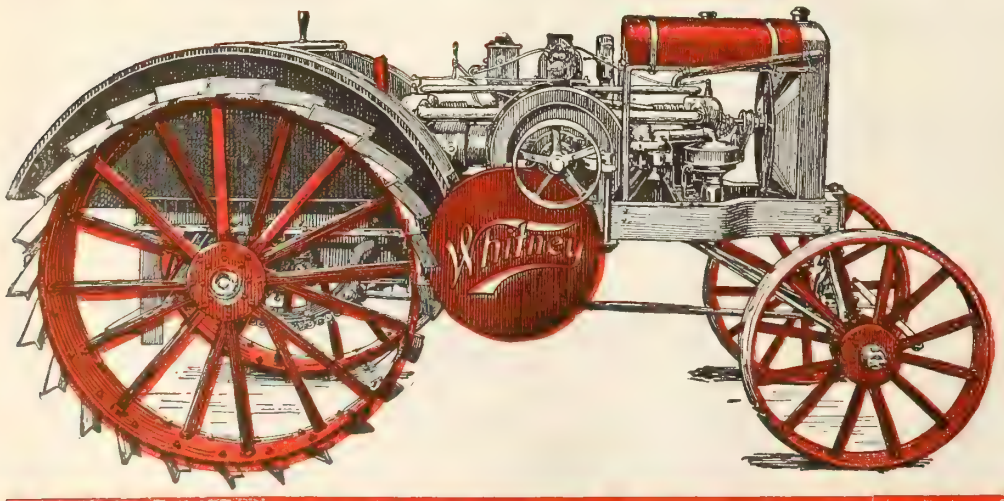
The Whitney is a sturdy, time-tested, field-proven two-plow tractor with the traction, strength and reserve power found in the best of the two-plow jobs built. Number of plows recommended for use with Whitney, two 14-inch; size thresher recommended 22" x 34."

The Whitney has not been "rated up." Instead it has been under-rated

The Whitney folks realized that tractor prices had to come down to the price level of other machinery---and of farm crops. They were convinced that the time had come when some one had to step in and manufacture tractors on a ***big-scale, close-margin, low-price basis.***

Huge production was the only answer. They concentrated the entire force of a $5,000,000 company on the manufacture of this one model time-tested Whitney. The result is a real utility tractor---a standard two-plow machine, long-lived, dependable, proven---at ***a price so low that every farmer in the country can easily afford to buy it.***

Next month---on this page---you will learn the facts on this biggest tractor value ever put on the market---***the most profitable dealer proposition in the tractor world.***



A PRICE THAT SHATTERS ALL FORMER STANDARDS OF TRACTOR VALUE

The World's Lowest-Priced Tractor

IF you want a "known-quantity," time-proven tractor that you can sell ---and sell ***NOW***---at a price never before equalled in tractor history---a tractor of the right size for heavy sales---backed by a $5,000,000 corporation which is going after this tractor market on a big-scale basis---YOU WANT THE WHITNEY!

The Whitney price announcement is going to sell tractors---Whitneys! It is going to jolt the farmer into immediate buying action. He's going to buy---and buy hard!

Your opportunity to cash in on this spring demand---and on a year-after-year big-profit business, lies in your getting lined up ***now*** with this concern. Don't wait until next month. Write now. Get the complete details on the most profitable tractor line on the market.

THE

Whitney Tractor Co.

2707 Prospect Ave. **Cleveland, O.**

Whitney Tractor Sales Co.,
Cleveland, Ohio.

Gentlemen:

I want to say a word of commendation about the Whitney tractor I purchased of you last spring. I am well pleased with it for two reasons. It has the power to do the work and its light weight enables me to use it on clay land without unduly packing it. And in wet times it is always ready to go over the top and never tries to bury itself and be a slacker.

W. W Bilsing,
Crestline, Ohio.

Whitney Tractor Sales Co.,
Cleveland, Ohio.

Gentlemen:

Have used the Whitney a year and am very much pleased with results. During the spring of 1918 I plowed 106 acres and fitted 56 acres for farmers who were shortest of help. While the land is hilly I have always plowed right through and have never had to use low speed except on tough joint grass sod I firmly believe the Whitney is the best farm tractor on the market today and for simplicity, reliability and economy it cannot be beat.

Very truly yours,
Arthur Lopus,
Waterford, Pa.

Whitney Tractor Sales Co.,
Cleveland, Ohio.

Dear Sirs:—

After using a 6-12 Whitney for four years, needing more power I purchased a 9-18 Whitney last October. Can say it is a marvel. What it will do: I have pulled an 8,000 pound hay baler in six inches of mud up hill and down and I have run a 16-inch silo filler to fill a 10 x 30 silo. We find the Whitney has plenty of power and some to spare and find it economical in the use of gasoline.

Respectfully Yours,
Howell Williams.
Lloyd, Ohio.

Whitney Tractor Sales Co.,
Cleveland, Ohio.

Dear Sirs:—

I am very much pleased with the Whitney tractor. It has done all I have asked it to do—buzz wood, run corn husker, 10 ft. feed grinder, 16 ft. Papec ensilage cutter. I filled a 10 x 34 silo in 7 hours. I moved a building 18 x 26 with the Whitney, pulled the dirt out of a cellar 18 x 20 x 3 1-2 feet, five miles away from home. I do all my plowing on 1st and 2nd speed. To say I am well pleased is making it very mild.

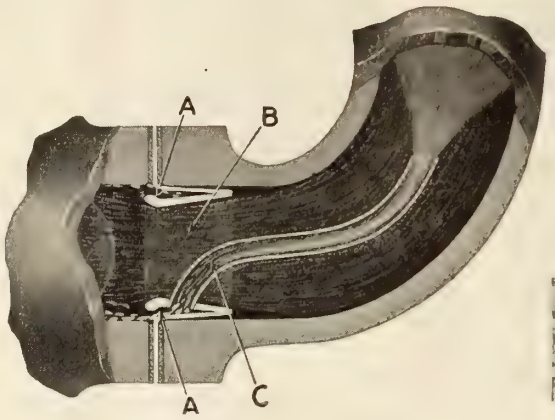
Yours truly,
W. B. Fox,
Upper Sandusky, Ohio.

Automotive Accessories *and* Implement Equipment

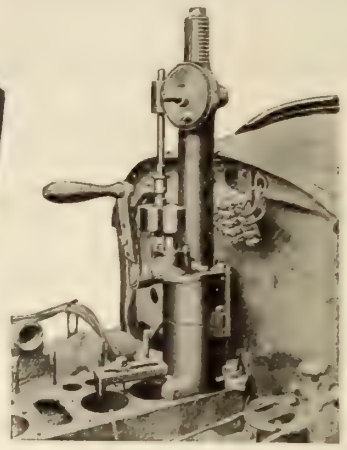
RE-ATOMIZER

THIS is a device to break up, mechanically, the heavy gasoline now used in motor cars, into small particles and mix with air so that it is carried by the air stream into the various cylinders in equal amounts, it is said, under all conditions. This is accomplished as shown in the illustrations, by the use of a Venturi throat "B" with an annulus or groove "A" around the entrance end, and an ingenious arrangement of tube "C" leading from the annulus into the central part of the manifold. The makers say that the air passing through the manifold creates a suction effect in the tube, so that any gasoline coming from the carburetor on or near the wall of the passage is drawn into the annulus, mixed with air and delivered from the tube in a highly atomized condition.

The model illustrated on this page is for the Ford car, but they are also made for Dodge cars and cars taking either 1, 1¼ or 1½ inch carburetor. To install the Re-atomizer it is only necessary to remove the two carburetor bolts and pull the carburetor away from the manifold flange about an inch, when the device can be slipped in. It is manufactured by the Penberthy Injector Co.

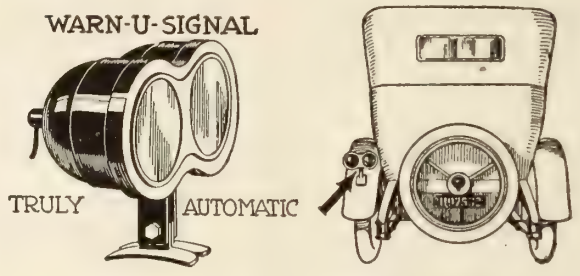


Penverthy Re-Atomizer


York Cylinder Reboring Tool

NEW AUTOMATIC SIGNAL

THE Acton Tool and Stamping Company have placed on the market a new automatic signal under the trade name of Warn-U signal. It operates only when the engine is in operation and is attached to the left rear fender. It signals red when the car is slowing down to turn or stop and automatically flashes green when the car is about to start again. There are no buttons or levers to be used in operating it, and it does not attach to the clutch or brake.

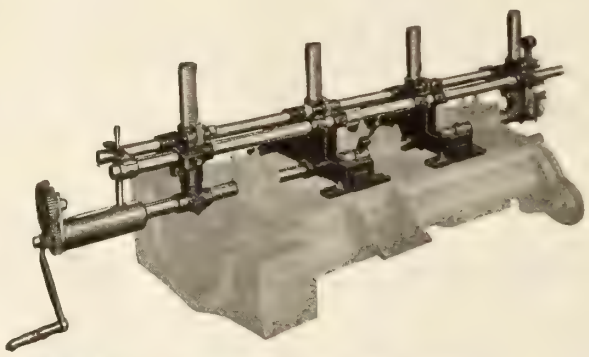


Warn-U Signal

MARMAC POWER-DRIVEN TIRE PUMP

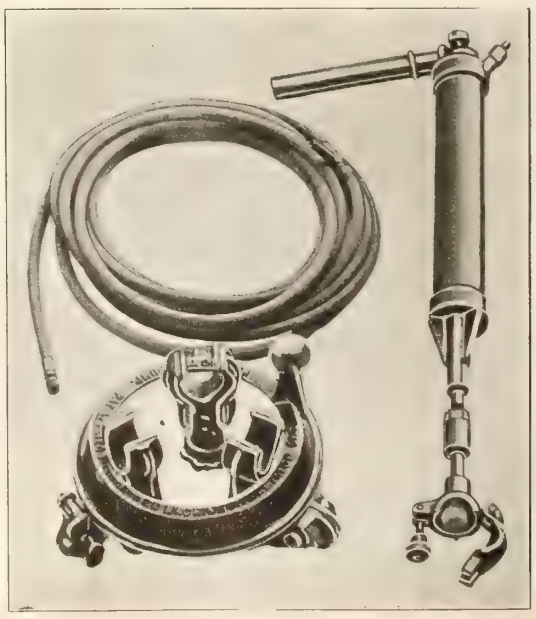
THIS pump is simple in design and can be easily attached and operated by anyone who can drive a car. It consists of a pump which attaches to the running-board plate and a driver which attaches to the rear wheel. It has a plunger type tandem piston; an air capacity, which, the makers claim, permits of a very rapid inflation action and a long easy power-driven stroke.

It can be attached and operated in the dark. A gauging tee is provided to allow the operator to gauge the air pressure from the seat of the car. To install it is only necessary to bolt a small stationary plate to the underside of each running-board The makers say no other change is necessary and there is nothing to connect to the engine, transmission or drive shaft. It is made by the Marten Machine Co., Hamilton, Ont.


Peters Universal Bearing Reamer

ATWATER KENT TYPE N. UNIVERSAL IGNITION COIL

THE Atwater Kent Mfg. Co., have announced an addition to their line. This new product will be known as the Type N. universal ignition coil, and the manufacturers claim that it may be used on any car fitted with the so-called "single coil unit" system.


Marmac Power-Driven Tire Pump

Atwater Kent Ignition Coil

The Type N. coil is said to give an extremely hot spark, a feature which makes for "snappy" engine action and high gasoline mileage. The insulation of the coil is waterproof and will not break down under even an excessive overload.

The coil is enclosed by a metal casing which protects it against mechanical damage. The condenser is detachable. A universal bracket permits the installation of the coil upon a wide range of car models and at many angles. A special adapter may be had for fastening to curved surfaces such as generator shells, etc.

YORK CYLINDER REBORING MACHINE

THE York cylinder boring machine is portable and designed to rebore all motor blocks of cars, trucks, tractor and marine engines.

The cutters furnished are a special design, it is claimed, and have a radius lead ground on them and are self-centering. The cutters are adjusted without removing the cutter head from the boring bar. A set screw in the adjusting core expands all the cutters uniformly.

The boring bar is threadless and has a 100 % bearing surface. The makers say it is a true spindle, turning and rigidty supported in a true bearing. The bar is supported by three bearings with an eighteen inch bearing surface.

The machine has two feeds—fast and slow. The fast feed advances the boring bar .072 in. per revolution. The slow feed advances the boring bar .030 in. per revolution. A continuous feed of the boring bar is provided because its turning and the driving of the feed mechanism is simultaneous. This feed mechanism consists of a set of quick change transmission gears mounted on a gear driveshaft which has a sliding key. These gears are driven by the same double bevel driving pinion which turns the boring bar, and mesh with a pair of gears keyed on the lead or feed shaft which has a worm mounted on its upper end operating through a large worm and spur gear driving the rack. Thus the boring bar is advanced in keeping with the change gears which are in action. It is manufactured by the Winterknight Equipment Co.

PETERS UNIVERSAL BEARING REAMER

THIS boring reamer is a combination boring and babbitting tool and is adjustable to all types of motors and is equipped with a universal jig for boring connecting rod bearings. Traverse motion is integral with the boring bar and traverse is instantly engaged by a thumb screw. When disengaged the bar can be moved backward or forward at will. Traverse has a feed of 86 continuous cuts to the inch assuring it is claimed a glass-like finish. A micrometer adjustment sets the cutter to the exact size desired. The connecting rod jig is located at the extreme end of the boring bar, and a simple method is employed to align the connecting rod by the wrist pin bore and centering to the boring bar. It is made by Peters, Incorporated.

WARN-U
SIGNAL
FOR AUTOMOBILES

Warn Before You Brake

The astute dealer will immediately recognize this idea as a real seller and will waste no time in cashing in on this initial demand!

THE WARN-USIGNAL is truly automatic day and night—rain or shine. Operates only when engine is running. It flashes RED just BEFORE slowing down to turn or stop, and automatically changes GREEN when you start in motion again.

THE WARN-USIGNAL does away with all hand signalling—makes driving more safe and pleasant. It is not attached to clutch or brake. It has no buttons or levers to operate. Such signal devices have all proven impractical and worthless in a short time.

THE WARN-USIGNAL cannot fail to operate because it is automatically operated and controlled by the engine. It is not attached to battery—uses no battery current, can be attached in a few minutes.

THE WARN-USIGNAL system is standard on all railroads and is used on new style Toronto street cars. It is decidedly practical and its popular use is assured beyond a doubt. As a dealer in automobile accessories you should waste no time in handling the much needed WARN-U Signal.

THE WARN-USIGNAL is to be manufactued in Canada by the Acton Tool & Stamping Co., Limited.

Write for Dealers' Terms

Acton Tool & Stamping Co., Limited
TORONTO

BURD
High Compression
PISTON RINGS

The World's Standard of Efficiency

permanent efficiency, therefore give better service efficiency—maximum power at the lowest expense for gasoline and oil—and prolong the life of the motor by keeping it clean and free from carbon. They are unequalled for lasting resiliency and permanent efficiency, therefore give better service at the end of six months than when first installed.

Backed By This Guarantee

Every Burd High Compression Piston Ring is **Guaranteed** to be free from defects in material and workmanship—and warranted to give more power, with less fuel consumption, than any other piston ring—when installed in cylinders that have not been warped or scored—or your money will be refunded after thirty days' use.

For sale by jobbers everywhere.

BURD RING SALES COMPANY of CANADA
322 McIntyre Block, Winnipeg, Man.
Burd High Compression Ring Co.,
Rockford, Ill., U. S. A.

Now as never before—

You Need Sound Financial Information

When so many investors, merchants, business executives, bankers, lawyers find in THE FINANCIAL POST the very facts which will help them in their investments, will **you** not find a weekly reading of its pages very beneficial?

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On the understanding that THE FINANCIAL POST contains just the facts I need for safe investment of profit, you may send me a recent issue.

Name .....

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Samson Makes Clean Sweep of Prizes at Provincial Plowing Match

PRIZE WINNERS IN PROFESSIONAL CLASS

1st. Fred. G. Sinclair, with Samson Tractor.
2nd. Clark Young, with Samson Tractor.
3rd. B. M. Robinson, with Samson Tractor.
4th. Albert Pay, with Samson Tractor.

SAMSON TRACTOR'S UNIQUE RECORD

In the Tractor Events of the big provincial Plowing Match held at Woodstock on October 20th and 21st, all the prizes except two—a fourth and a fifth—were won by the drivers of Samson Tractors. So also was the Gold Medal awarded by the Ontario Plowmen's Association. This is a unique record, and conclusively proves the performance of the Samson Tractor.

In commenting on the Match the Woodstock "Sentinel Review," in a front page article, says in part:—

"The work of these plowmen was of an exceptionally high quality for tractor plowing and according to competent observers it was made possible by the easy handling qualities of the Samson tractor. This tractor, it was observed, could be throttled down to a speed which resembled a crawl, enabling the men to put a fine finish to their work and get the quality which the other machines, rushing along at a faster rate of speed, could not obtain. Yet, when speed was needed to finish within the time limit **the power was there** and they were able to move as quickly as the fastest there, and **still to maintain the same high grade of plowing.**"

Speaking of the prize-winners in the professional class—every one of whom drove a Samson—the account continues: "These men, some of them champion horse plowers, showed that they could do equally good work on a Samson Tractor and get enough speed to enable them to do a like area in **one third the time.**"

Samson Power requires no further proof of its efficiency.

Mr. FRED G. SINCLAIR, of Oshawa, Winner of Gold Medal of Ontario Plowmen's Association, is here shown with the prize-winning Samson Tractor. Note the straight, even furrows.

Samson Tractor Company of Canada, Limited

Division of General Motors of Canada, Limited

OSHAWA :: ONTARIO

"ECO" BURNING-IN AND RUNNING-IN MACHINE

THIS equipment is designed for burning-in and running-in all makes of motors. It is portable and can also be used for cranking stiff cars. It is part of the equipment of the Eco universal motor handling machine. Bearings can be run-in without removing the motor from the car.

The engine stand is made of the best grade gray iron, strong and substantially constructed the makers say for durability and service. The burning-in attachment is made of channel steel, best grade grey iron castings. The line shaft is made of tool steel, fitted with universal joint, 3 phase A. C. motor, back geared nine to one ratio, giving 27 horse power torque or pull on line shaft less the friction.

It is manufactured by the Western Manufacturing Co.

OAKES SPARE TIRE LOCK

A NEW spare tire and rim lock that is claimed to foil effectively the spare tire thief has recently been placed on the market by Oakes Company. It has two simple parts, a barrel-shaped casting of malleable iron about 2 inches in diameter, and a non-pickable, dust-proof, removable lock which fits in the outer end of the lock housing. The rear end of the casting has a centre hole through which the threaded stud, found at the bottom of most tire carriers, is passed. The nut is then replaced on the bolt inside the lock housing and screwed tight. The lock itself is then snapped in place, making it is claimed the tire and rim theft-proof.

The lock housing is finished in glossy black enamel and the lock face is nickel-plated. The lock itself is an approved type that has almost unlimited key changes to insure safety. The device is made in several types and hence is adaptable to nearly all cars.

ORUM SWINGING BRACKET STEAMER

THIS battery steamer is mounted on a swinging bracket instead of three legs and can be mounted on the wall. In this way it does not take up any bench room.

The boiler is of the flash type. As soon as the gas is lighted the generator begins to produce steam. It is manufactured by S. R. M. Orum.

KURTZ GAS ENGINE GOVERNOR

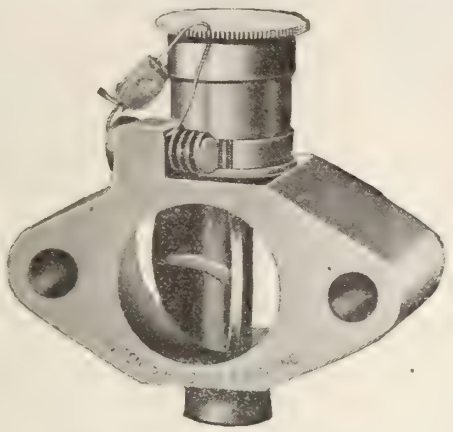
THIS governor is for tractors, trucks, automobiles and stationary engines. The makers claim it is equally sensitive to a variable load at any engine speed. It is easy to install on most engines, it is claimed, because it has no moving mechanical connection and requires only 1⅝ inch space between the carburetor and intake manifold (up to 1½ inch carburetor sizes.) A slide valve form is furnished for 2 inch and 2½ inch carburetor sizes.

A barometer action equalizes atmospheric pressure through the carburetor into a variable vacuum producing a uniform carburetion and mixture. An automatic valve closes partially at high curve of suction at the middle and opening of both ends of the stroke, equalizing the irregular volume and texture of the mixture, and it is said, indicates the condition of the motor. It is manufactured by S. E. Kurtz and Son.

STERLING UNIT-CELL STORAGE BATTERY

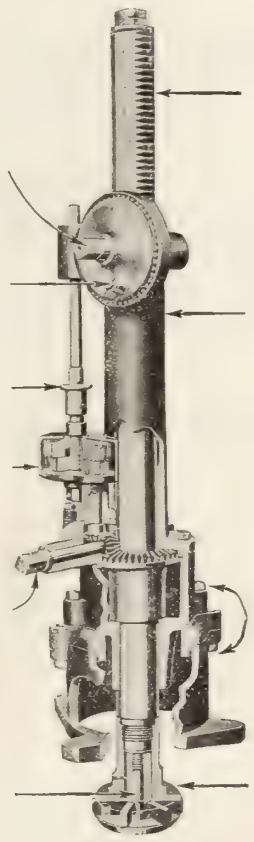
THE feature of this battery is that each cell is an individual, interchangeable unit. In the case that one cell goes dead it may be removed by screws, the screws which hold connectors on, and removing the cell. The battery is sold with an eighteen months' guarantee. It is made by the Sterling Storage Battery Co., Inc., Schenectady, N.Y.

Orum Swinging Bracket Steamer

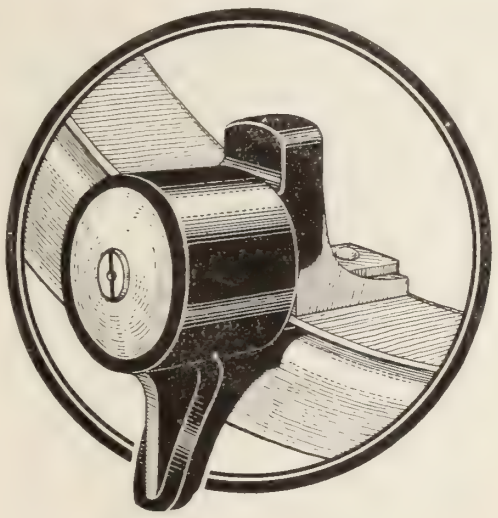


Kurtz Gas Engine Governor

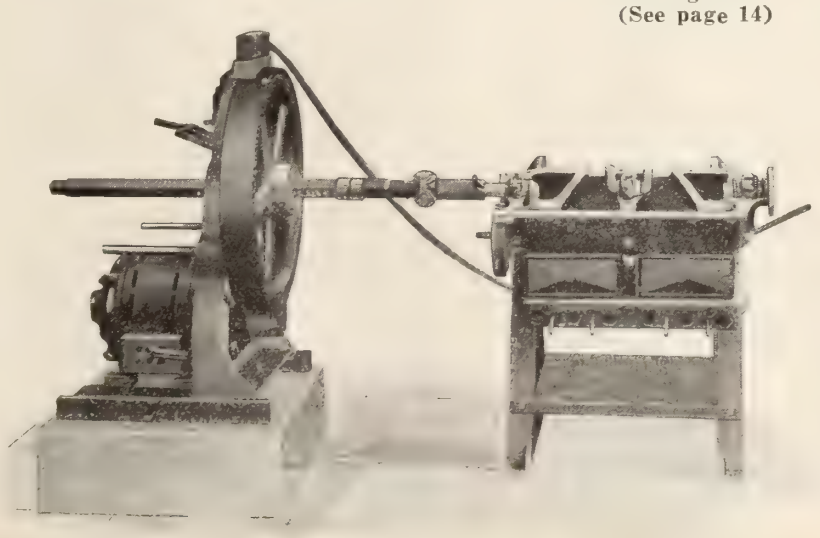
J. & B. Rocker Arm Lifter



York Cylinder Reboring Tool
(See page 14)



Oakes Spare Tire Lock



"Eco" Burning-In and Running-In Machine

J. & B. ROCKER ARM LIFTER

THIS tool is used in conjunction with the same company's Valve Cage Remover, for Buick cars, and is for the purpose of lifting the rocker arm clear from the ball end of the push rod, allowing the push rod to be sprung out of place, and the rocker arm to be revolved about its axis, away from the valve stem, giving free access to the valve cage, spring and stem. It is made from dropped forged steel, rust-proofed. The manufacturers are the J. & B. Manufacturing Co.

LEADER ACID PUMP

ANNOUNCEMENT is made by the Leader Battery Equipment Co., Inc., of the development of a universal battery acid pump. It is designed to fit 60 to 100 per cent. of the carboys on the market the makers state.

Further claims are: it automatically justifies its air control; the flow of the pump may be stopped instantly; and it is easily adjusted to every carboy up to three feet in depth.

The outlet of the pump consists of hard rubber tubing, standing a specific gravity acid up to 1720. The size of the stopper that fits the neck of the carboy is 2½ inches by 3 inches by 1¼ inches. The outlet pipe of the acid is ⅝-inch with a 3/16-inch wall.

THE BRADLEYSTAT

OVERHEATING of the auto storage battery with all its resultant annoyances and expense is daily being given more attention by the storage battery manufacturers and service stations. It is recognized that much of the trouble with batteries can be avoided by intelligent care on part of the motorist. Overheating means overcharging and the latter may be due to too great a current from the generator to a battery that otherwise is in a healthy condition or it may be due to the effects of a normal current to a battery that is low in electrolyte.

To provide the owner with the opportunity of regulating the charging current to his battery, a new device called the Bradleystat has been developed for mounting on the dash of the automobile, and by means of a simple addition to the connections on the machine, the driver is able to adjust his charging current to meet his own particular requirements. For city driving, with frequent starts, when the battery is required to deliver a great deal of current to the starting motor, the charging rate can be adjusted to a high value to keep the battery fully charged. For long trips in summer, when long periods of charging result, and the battery is not used frequently for starting or for lights, the charging rate can be reduced to prevent overheating and buckling of plates. In winter, the rate may again be increased because more current is used for starting cold motors and in burning lights.

The connections are such that the ammeter will still indicate the current flowing into the battery. The Bradleystat is a small graphite compression type of rheostat, simple in construction and practically indestructible. It is connected across the generator terminals ahead of all other devices in the electrical system. For grounded systems this only means one connection from the Bradleystat to the generator terminal. The return circuit is established through the grounding of the Bradleystat on the metal dash. A slight adjustment of the thumb screw causes the excess charging current to flow through the Bradleystat tube and be absorbed in the form of heat that otherwise would overheat the battery. This device is manufactured by the Allen-Bradley Company.

A little bit of caution on the part of the operator when in a bad field will often save him a greal deal of trouble.

Sell the line already half sold

The Combination That Opens Up Business

There is money in the farm and dairy machinery business today—if you know how to go after it.

Go after it the way you get your money out of your safe—use the combination.

The combination is this:

1.—Lister quality so well known in Canada that Lister Machines are already half sold.

2.—Our list of price reductions, now being widely advertised in leading farm papers, opens the door to a bigger balance in your bank account—if you get busy now. Write us for particulars.

—Reduced prices on

Lister Engines, Melotte Cream Separators, Lister Milkers, Ensilage Cutters, Grain Grinders, Farm Lighting Plants, Lister Premier Cream Separators.

R. A. Lister & Co. (Canada) Limited

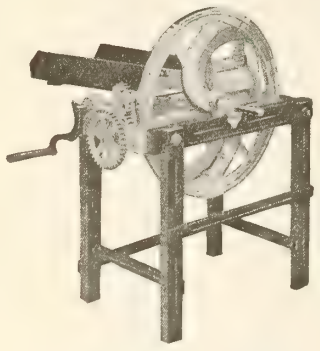
Stewart St., Toronto :: Wall St., Winnipeg

Have a Slice!

of the big business lying all around you for

Peter Hamilton

HAND AND POWER



No. 6 STRAW CUTTER

Hand or power

Boost Straw Cutters and up go engine sales

Feed Cutters

Results from other farm lines may or may not be making you happy. Come! Get busy on Peter Hamilton Feed Cutters and reap a harvest of sales like other dealers all over the country are doing. All sizes of feed cutters from hand power to power run machines for big stock raisers. Territory open for live dealers who want

BIG BUSINESS

We'll help. Circulars for distribution to your prospects. Write right now while the selling is good! Get your slice of good territory NOW.

Peter Hamilton Co., Limited

Makers of Agricultural Implements

PETERBORO ONTARIO

Dairy *and* Household Supplies

National Dairy Show

By C. M. McLENNAN

PROGRESS in every department of the dairy industry was evidenced at the Fifteenth National Dairy Show held in St. Paul, Minn., October 8th to 15th. Dairymen, operators of dairy factories, breeders of record milk producers and manufacturers of dairy machinery and equipment from every corner of the continent contributed to the unprecedented success of the event, and the attendance included practically everyone from the humble owner of a few grade milch cows to the "ultimate consumer" of his products.

Estimates placed the attendance all the way from 50,000 to 100,000 for the six days. Probably the total was not as great as has been recorded at some previous show, but the right kind of people were there in a way that gratified everyone. Large delegations of farmers from the Dakotas, Minnesota, and Wisconsin, the latter two the greatest dairy states in the Union, and throngs of interested urbanites from the Twin Cities poured into the arena to see the dairy queens and monarchs pass in review. They were not only interested in the cattle but also crowded around the machinery and equipment exhibits, to marvel at the progress made in machines that convert the product of the milk pail into delicacies for the table.

Every conceivable kind of apparatus used in the sterilization, transportation, and handling of milk and the manufacture of butter, cheese, ice cream and the many other milk products, was on view. The manufacturers of these many devices are supplying the dairyman with every labor saving appliance he can use to advantage, and are keeping in touch with the demands of the industry, thus doing their part toward promoting progress.

In this space it is impossible of course to describe all of the exhibits but we will endeavor to touch on a few that will be of most commanding interest to our readers. There were about fifty Canadians in attendance, including the cattle exhibitors and government officials, which is an indication that the big event is not only national but international.

The National Dairy Council, which is doing so much in the way of educating the public to a realization of the food value of milk and dairy products in general, had a number of splendid exhibits and also put on some excellent demonstrations. One of the features in connection with the work of the council was an address by Hon. Frank O. Lowden, of Illinois. The chief mediums through which the National Dairy Council works are public schools, women's clubs, and home demonstration agents. They also reach the public by means of pamphlets, booklets, and posters carrying messages concerning the nutritive value of milk. Newspapers are also devoting space to hints and reminders about its healthfulness.

There are about 3,796,000 pounds of whey made in the cheese factories of the nation, according to charts exhibited at the show by the dairy division of the United States Department of Agriculture. In that amount of good whey there is actually as much valuable protein as there is in 180 million pounds of beef, and yet most of it is wasted. Whey contains such vital by-products as lactose, proteins, and milk salts. Science, which has taken all but the grunt from the pig and converted it into usuable things, is now telling the dairyman what he is wasting in whey. Among the machinery exhibits were many makes of whey separators which enabled the show to carry a whey conserving message, among many other vital messages, back to the farms of the dairy sections. It costs less nowadays to save whey for whey butter or other products than it does to drain it off into the sewer.

The demand for sanitary milk is increasing. People are getting finicky, and if the dairyman get enough more to repay them for additional equipment required to produce it, they will gladly cater to the trend of the trade. One of the government exhibits called attention to the fact that whole milk will keep sweet under summer conditions for 118 hours from milking time, if prompt cooling, clean cattle, sterile utensils, and the small-top milk pail are employed.

Of all the common, easily attained factors, the greatest and most vital is prompt cooling. Again the commercial exhibits came to the fore with reminders that such equipment can easily be obtained and at relatively low prices. Cooling immediately after milking to 50 degrees Fahrenheit will keep down bacteria and maintain a sweet natural wholesome condition in the milk.

Progressive dairy farmers will be planning this winter for proper cooling equipment. Why not get a line on it? This can be made an important adjunct to your business if you are in a dairy locality.

Wisconsin's Fifty Years of Progress

Wisconsin chose to feature "fifty years of dairy advancement." The exhibit was arranged along one side of the building and began at the left end with a wax figure dressed in overalls and denim shirt of 1871, when as stated on the placards, "dairying was in the days of the brindle cow, the dash churn, the butterbowl and the grocery store market." The scenic background portrayed the rough, log stable with thatched straw lean-to's common in those days. Next came the period of pioneer organization in charge of the Wisconsin Dairymen's Association.

Among the first steps which they took to bring order out of chaos and set the dairy wheels to moving was to get a 60 per cent reduction in cheese freights (would that they were able to do the same now) and to secure refrigerator cars for shipping dairy products to distant markets. In front of the photos of these vigorous pioneer dairymen were the rude implements of those old days of real labor, such as the dash churn, the butterbowl, the ladle and the wide pan for setting cream.

Passing along one came to the period of invention and manufacture. Here were depicted the seven successful dairy tests invented by Wisconsin dairy scientists which are now used the world over. They are the Babcock fat test, the curd test, the sediment test, the cheese moisture test, the ice cream runover test, and the casein test. Along with these came the introduction and quick adoption later of the cream separator, the milking machine and the best of barn equipment.

"Niagara of Milk"

Wisconsin's "Niagara of Milk," an electric motor machine that poured a constant stream of milk over a miniature falls gave a vivid touch to the

scene. It bore the label that there are 10 tons of Wisconsin milk produced for every minute of the day and night, each year. The dairy breed census was interestingly played up also. It showed 80,000 pure bred Holstein cattle in Wisconsin, 20,000 pure bred Guernseys, 8,000 pure bred Jerseys, 2,000 pure bred Brown Swiss, and 1,700 pure bred Ayrshires. The object of the exhibit was tersely stated as follows: "That merchants and manufacturers and bankers, as well as farmers, owe a debt of gratitude to the dairy cow."

Minnesota Exhibit

Minnesota's exhibit in the same building on the opposite side, was placed there by the state dairy and food commission, the University of Minnesota, the state board of health, the state dairy council, and the Twin City Milk Producers' Association. The dairy resources for 1920 in Minnesota were listed at $202,675,000. Truly Minnesota is well named for "bread and butter state," for its mills and its creameries lead the world in the output of this vital staff of life.

Giant Thermos Bottle

A giant "Thermos Bottle Car" carrying 12,600 gallons of milk, was the next surprise in the commercial world. This innovation in the transportation of milk, which is destined to revolutionize milk hauling, was one of the features of the Show. There are 8 pounds of milk in a gallon. That would mean 100,800 pounds to fill the huge tank car. The average cow gives 20 pounds of milk a day so it would require one day's milking of 5,040 cows to produce enough milk to fill a single car. The car is made of steel, lined with glass, similar in size and shape to the tank cars used for the transportation of oil. According to information received by Mr. W. E. Skinner, Manager of the Show, from the Pfaudler Company, the makers of the car, test runs of 80 miles have been made by the tank cars and in eight hours the temperature loss was only 1½ degrees.

This is just one more advance in the dairy industry, and it is an illustration of the lessons that can be learned by every one in and outside of the industry at the National Dairy Show.

Some of the other exhibits included:

The Electric Milker Corporation with an entirely new electric milker called the Blue Ribbon. This machine makes a new departure in that the motor and vacuum equipment is installed on the pail. All the farmer needs to do is attach the cord to any light socket.

The J. G. Cherry Co. of Cedar Rapids, Ia., showed a nice line of pasteurizing equipment.

The York Milk Machinery Co. of York, Pa., showed a compact and serviceable bottle washer and sterilizer as well as other equipment.

Lathrop-Paulson of Chicago showed automatic bottle and can washers of improved design.

The Pfaudler Co., of Rochester, N. Y., showed a magnificent line of glass-lined equipment.

The Milwaukee Dairy Supply Co. showed their fillers and cappers.

The Elyria Enamelled Products Co. showed glass enamelled steel equipment, including a giant glass lined milk tank mounted on a truck.

A. H. Barber Co. showed their line of creamery supplies and equipment.

De Laval had a complete line of separators and milkers in an attractively arranged booth that was the mecca for interested farmers.

The Louden Machy. Co. had a very attractive exhibit of barn equipment and accessories. Their model barn was inspected and admired by thousands.

Other exhibits included such products as refrigerating systems, bottle caps, milk cans, bottles, power churns, bottle carriers, butter tubs, scales, boilers, testing instruments, cartons, coolers, condensers freezers, delivery trucks, evaporators, filters, buttermilk dehydrators, and many other devices that play their part in putting milk, cream, butter, cheese, ice cream and other milk products on the user's table in sanitary, palatable form.

There is a big opportunity in some of these lines for Canadian dealers, especially in those sold direct to dairy farmers.

Those interested in this class of merchandise should arrange to attend future shows and inspect this comprehensive panorama of exhibts. One can learn much by reading, by observation, by talking to men in their plants, by listening to traveling representatives of manufacturers. But after all, these means are limited as compared to the enlightening effect of the impression of the eye.

It is not without reason that the man in the street used the word "see" as synonymous with understand. When he says, "I see," he means "I understand," and he does. A trip to the Dairy Show means more than months of discussion and study. It means more than volumes of print.

It will interest Canadian dealers to know that Ontario breeders won first in the State herd competition in Jerseys and third in Holsteins. B. H. Bull & Son of Brampton captured a long string of blue ribbons in the Jersey classes.

Sessions of the National Association of Ice Cream Manufacturers, International Milk Dealers, National Creamery Buttermakers and the Minnesota Creamery Owners and Managers Association were held during the Show. All were well attended and profitable.

It is difficult to think of a single feature of the event that wasn't profitable and everyone who attended went home with the feeling that they had learned something of value that could later be put to practical and profitable usage.

BLACK & DECKER ESTABLISHES NATIONAL CREDIT SERVICE

THE Black & Decker Mfg. Co. whose products consist principally of electric motor driven shop equipment such as portable electric drills, grinders, etc., have recently put into effect what they term "The Black & Decker National Credit Service."

The Black & Decker products are sold entirely through jobbers and the new service enables users of Black & Decker equipment to buy it through a regular jobber by paying 25% of the regular price of the item in cash and the balance in six equal monthly payments. Nothing extra is added to the standard price for the long term credit and no interest is charged. Jobbers have been supplied with printed forms to be used for orders taken under this plan. These order forms are conditional sale agreements which make the item sold its own security until entirely paid for. The jobber forwards these orders to the Black & Decker Co. who discount them for the jobber so that every sale made under this plan is in effect a cash sale for the jobber. The Black & Decker Co. shares fifty-fifty all responsibility with the jobber for the fulfillment of the sales agreement. It is generally acknowledged that the principal obstacle in the path of normal sales today is financial and this plan should make it possible for the user to increase his income and thereby improve his financial situation, so that he can pay for time and labor-saving equipment and after it is paid for have the increased income for other purposes.

BRANTFORD PLANT DAMAGED BY FIRE

Brantford, Ont.—A fire of incendiary origin on the night of October 22, caused $10,000 damage to the plant of the Blue-Bird Corporation, washing-machine manufacturers. Oil-soaked waste and canvas found at the seat of the blaze proved beyond all doubt that firebugs were responsible. The outbreak occurred in a store-shed next to the newly-completed extension to the Blue-Bird main plant. It was quenched only after a hard fight on the part of the fire brigade. An investigation commenced immediately the blaze was conquered and resulted in the discovery of the oil-soaked kindling.

---this Boy and Slate has Proven Its Value

If you sell gasoline and oil, or lubricants of any kind either for automobiles, tractors or waggons, and want to increase your business—just find out what the Boy and Slate sign will do. It's a wonder, and the proof is yours for the asking. Just write and ask any one of our Branches for particulars. Address Dept. M.T.I. 11.

Canadian Oil Companies, Limited

BRANCHES: Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary.

THE VALUE OF THE "S.V."

TRADE MARK S.V. REG.

The trade mark, "S.V.", that is stamped on every genuine "Vessot" Grinding Plate, has a distinct selling value. Farmers everywhere are well acquainted with the grinding and long-wearing qualities of "Vessot" Plates. The presence of that "S.V." is to them an assurance of the very highest quality plates obtainable.

"Vessot" Feed Grinders are made in 9 sizes. It is a complete line.

Any branch office of the International Harvester Company can give you particulars of the "Vessot" Agency Plan.

Invented and Manufactured by

S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by

International Harvester Co. of Canada, Limited

Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina Saskatoon, Estevan, Yorkton, Brandon, Winnipeg London, Hamilton, Ottawa, Montreal, Quebec, St. John,

HUPP CARS REDUCED

DETROIT, Oct. 26.--Price reductions, ranging from $100 on closed models to $235 on the touring car and roadster, are announced by the Hupp Motor Car Corporation, effective immediately. The cut in closed cars is the second within the last month, the first trimming was $250 off the price of the coupe and sedan.

FEDERAL TRUCKS REDUCED

THE Federal Motor Truck Co. announce a reduction, averaging 22 per cent in the prices of all models. This means a saving to truck buyers of $700 on 1 and 1½ ton models, $550 on the 1½ to 2 ton, $600 on the 2 to 2½ ton, $800 on the 3½ to 4 ton, and $850 on the 5 to 6 tonner.

In making the announcement M. L. Pulcer, Vice-president and General Manager of the Federal Motor Truck Co. said:

The buyers' strike has accomplished many things. It has brought down material and labor costs but it has also made quality paramount. The buyer's comparisons of worth of the goods or article, are much more in evidence in all lines than they have been for years. The test of the market now is—the best quality for the lowest possible price, and an assurance that the truck purchased will always be adequately serviced.

PACKARD PRICES CUT

THE Packard Motor Co. have announced a cut of $625 in the price of their single six model. With such a drop in price President Alvan Macauley is convinced that his company's factory production during the winter months will be increased, instead of sinking to the minimum, as normally happens. The Packard Co. expect it will be possible to take on more men.

HART-PARR REDUCES TRACTORS

EFFECTIVE Nov. 1, the Hart-Parr Co., has reduced the price of both models of its tractors.

The price of the Hart-Parr "30," which for the past year has retailed in the U. S. at $1,595 f.o.b. factory, is now listed at $1,295 cash, f.o.b. factory. The Hart-Parr "20," which was reduced June 1, from $1195 to $995 cash is now listed to sell in the States at $945 cash, f.o.b. factory. These prices are the lowest at which these tractors have ever been sold.

MAXWELL ANNOUNCES REDUCTION

DETROIT, Oct. 31—Following its recent announcement of new models the Maxwell Motor Corp. announces a reduction in prices as follows, U. S. prices:

	Old Price	New Price
Roadster	$ 845	$ 850
Touring car	845	850
Coupe	1,445	1,385
Sedan	1,545	1,485

The president of the Company states that 24,000 cars on hand when the reorganization of the company was completed have been sold as well as nearly all the 10,000 produced since that time. Former models on hand now average less than one-half car per dealer.

REPUBLIC TRUCKS REDUCED

ALMA, Mich., Oct. 31—Prices of Republic trucks have been reduced, effective immediately, as follows, U. S. prices.

	Old Price	New Price
1 ton	$1,695	$1,395
1½ to 2 ton	2,295	1,795
2½ to 3 ton	2,795	2,195
3½ to 4 ton	3,845	3,095

DIAMOND T ANNOUNCES PRICE REVISION

CHICAGO, Oct.25—Price reductions announced by the Diamond T Motor Car Co. on all its models are as follows, U. S. prices:

	Old Price	New Price
1 ton	$2,500	$1,975
1½ ton, model F S	2,960	2,525
1½ ton, model T	2,650	2,250
2 ton	3,285	2,650
3½ ton	4,675	3,750
5 ton, model E L	5,400	4,325
5 ton, model S	5,650	4,500

FORD OF CANADA DECLARES DIVIDEND

DETROIT, Oct. 25.—The Ford Motor Company of Canada to-day declared a dividend of 15 per cent. payable November 10 on stock of record November 3. In June last 15 per cent. was paid, making a total of 30 per cent. in cash during the current year.

A CASE OF LONG SERVICE

Did you ever hear of a team of horses that had worked on a farm for thirty-two years? Hardly—yet here we picture an old style steam engine that has such a record, and is still good for many more years of equally hard service.

This strange looking engine is an old style Case Return flue boiler steam engine. It is the property of Mr. Pascual Ortolani, who lives at the Estacion Fisherton, close to the City of Rosario de Santa Fe, Argentine Republic. Mr. Ortolani is an Italian farmer who settled in Argentine a good many years ago.

The owner of this "old timer" is most enthusiastic over its performance, and states that in all these years of active service, he has never had to replace a worn out or defective part. Its bull gears, flues, etc., are still in good condition.

When the photographer was taking this picture he asked Mr. Ortolani how old the engine was, and was told that he just couldn't remember exactly. After a long pause he shrugged his shoulders in typical Italian fashion, and gestured to an old lady, and asked her, "Do you remember in what year my son Juan (now a sturdy man) was born?"

"About 1890," the old lady answered.

"Well, about one year before my son was born I bought this engine, that was in 1889 and up to this date it has been working regularly, and I am not thinking at all to get rid of it."

DURANT MOTORS READY TO GO AHEAD

THE Durant Motors of Canada, who purchased a factory site recently at Leeside, Ont. have been incorporated under provincial charter with an authorized capital of $2,000,000, and expect to reach the production stage by March 1922. Of the $2,000,000 authorized capital, only $1,500,000 is being issued at $10 per share. Of this sum $750,000 is being subscribed by the parent company, Durant Motors Inc. of the United States.

Much interest centres on the question of whether the Canadian company will manufacture the parts of the car or will merely assemble them. It would be impossible to establish plants here for the manufacture of tires, starting and lighting apparatus and all the other components of automobiles, on a capital of $1,500,000 and have the first completed car ready for sale by March next. At the outset, therefore, the body only will be made at the Leaside plant, the other parts being supplied by the same interests as supply the Durant subsidiaries in the United States. Those are the Fiske Rubber Company, which provides the tires; The Autolite Co. of Toledo, which makes the starting and lighting apparatus, and the Continental Motors Corporation of Detroit with whom a contract for 100,000 motors will probably be concluded by the parent company this week at a price said to be unusually low. The wheels may be made in Canada.

Mr. Durant has some hopes, however, of inducing these allied enterprises ultimately to establish themselves in Toronto when the market for autos in Canada has so grown and has been so concentrated here as to warrant such a step. Indeed it is possible that the Autolite Company of Toledo, may come to Toronto in the near future.

The directors of the company will be headed by W. C. Durant as president; C. F. Daly, formerly vice-president of the New York Central Railroad as vice-president; Carroll Downes, former vice-president of the Philadelphia National Bank as secretary-treasurer; and two other directors, C. O. Minige-, president of the Autolite Company, of Toledo, and T. W. Warner, president of the Warner Corporation of Muncie, Indiana.

ARTICLES FROM M. T. I. INCLUDED IN THE INDUSTRIAL DIGEST

READERS of this paper will be glad to know that many of the important articles we publish will be covered by the new weekly, The Industrial Digest. which abstracts the informative articles from nearly six hundred leading trade and technical publications. Digests from this magazine will appear under one of the following industrial classifications, and cross-references will be provided for articles related to other industries:

Automotive, Building and Construction, Cement and Concrete, Drugs and Chemicals, Electrical, Fuel, Coal and Power, Glass, Pottery and Jewelry, Machinery and Machine Products, Iron and Steel, Food and Beverages, Brick, Stone and Clay, Leather and Leather Products, Metals and Metal Products, Mining, Oils and Petroleum, Printing and Publishing, Clothing and Garments, Rubber, Sugar and Confectionery, Textiles, Paper and Paper Products, Hardware and Paints, Lumber and Wood Products, Transportation Packing, Canning and Refrigerating, Amusements and Hotels, Advertising, Financial, Economic, Engineering.

An annual index will be issued, supplying readers with a comprehensive review of the most important articles in our paper as well as articles from each of the other six hundred periodicals.

The new weekly will be issued by the Periodical Digest Corporation at 25 West 45th Street, New York City, is designed to save time and trouble for the busy executive and serve as a much-needed supplement to the industrial magazines which are the very backbone of our national industrial information.

DURANT MAKES CONTRACT WITH CONTINENTAL MOTORS

NEW YORK, Nov. 4—Reports that Durant Motors, Inc., had closed a large contract with Continental Motors were confirmed by W. C. Durant today in an announcement to the effect that all of the motors for the Durant four-cylinder car, supplying the plants at Long Island City; Lansing, Mich., Oakland, Calif.; and Toronto, Ont., would be made by the Continental Company.

The contract just closed provides for a minimum of 100,000 motors and involves, it is understood, between $12,000,000 and $15,000,000. The motors are to be built according to specifications of Durant engineers.

This is believed to be the largest single transaction in automobile parts ever negotiated.

An interesting side-light in connection with this contract which indicates the degree of confidence existing among big business men, is brought out in an interview given by president Ross W. Judson of Continental Motors in which he states that upon Mr. Durant's assurance last April, when an order for a sample motor was placed, that a mutually satisfactory contract would eventually be signed, and upon Mr. Durant's verbal assurance only. Continental Motors invested in tools and special equipment necessary to expedite production upwards of $700,000.

Durant Motors, Inc., founded last January by W. C. Durant, former President of the General Motors Corporation, broke all existing records in the automobile industry when it produced its first car within six months after organization.

"The order for 100,000 motors has been made necessary by the demand that has sprung up everywhere for the Durant Four," said Mr. Durant. "We have presented it as just a real good car, and in character it seems to be meeting a wide-spread need."

In getting into actual production of cars, Durant Motors, Inc., cut the best previous record of any newly established automobile company from two years to six months.

The Indiana plant will produce six-cylinder cars. The contract for the six-cylinder motors has been let to the Ansted Motor Company of Connersville Indiana.

Always lock a nut if making an adjustment and do not neglect to replace cotter pins which you may have drawn.

COCKSHUTT INVENTORIES MARKED DOWN TO REPLACEMENT VALUES

THE annual statement of the Cockshutt Plow Co., Brantford, Ont., for the year ending June 30, 1921, reveals drastic efforts at readjustment. Inventories were marked down to replacement values; no less than $689,365 being appropriated for that purpose. Along with that a reduction in the dividend on preferred was made to 4 per cent., as against 7½ paid the previous year.

Despite the heavy reduction in inventories, the working capital position of the company shows slight change from last year, the surplus of current assets over current liabilities being $6,229,861, compared with $6,506,129. There is a substantial increase in bank and other loans in the liabilities column, but there is also a higher inventory, even after the writing off. The dividend position of the company is explained in a note, which says that the dividends on the cumulative preference shares have been declared and paid to June 30, 1914, and further dividends, totalling 19½ per cent., have been declared during the four years ended June 30, 1921.

President H. Cockshutt, in his report to shareholders, says:—"Notwithstanding that sales of all makes of farm implements were considerably curtailed, largely due to price reductions of farm products, the business of the year was as good as could be reasonably expected.

"Your directors feel satisfied that, as soon as the readjustment period in business has been accomplished, your company will be in a very advantageous position to take care of the increased business anticipated.

"As will be observed, a very substantial amount has been written off profit and loss for price declines in the inventory, in order to bring same in line with replacement values and to permit of lower sale prices."

ENGLISH TRACTOR TRIALS

THE International Tractor Trials and Power Farming Exhibition, organized by the Society of Motor Manufacturers and Traders held at Shrawardine, near Shrewsbury recently was a great success.

A feature was deep ploughing. One tractor drew a plough that turned a furrow 17-in- deep, a depth that could not be turned by horses. Another feature was self-lifting harrow tests, which is absolutely new in farming operations. These and other experiments during the trials have shown that agricultural implement makers are adapting their machines to the tractor. The concluding day's ploughing was on fields baked hard by the dry weather, but ploughshares three deep, working continuously for five hours with gradients up to one in 10 showed no signs of the hard work.

Scott Hall, the organizer of the trials, reported that out of the 40 tractors tested there had not been a single failure.—London Times.

BUSINESS IMPROVEMENT IN WEST

H. C. COX, president of the Canada Life Assurance Co., has returned to Toronto from an extended tour which took him from Winnipeg to Vancouver. He has brought back a very optimistic report of the West and says that farmers are now buying freely. Business in the cities is also improving and another encouraging thing, according to Mr. Cox is the abundance of new building which is being undertaken throughout the entire West. In Regina alone 400 new houses are at present under construction.

The Continental Motors Co., who have the contract to supply motors for the new Durant car, which will be built in Canada by Durant Motors, will establish a Canadian factory in accordance with the terms of the contract that all parts for the Durant car should be manufactured in Canada.

MAYBE ADAM LAUGHED AT THESE

The Carborundum Degree—Sambo—Looky heah, big boy, don't yo-all mess wid me, 'cause Ah's hard! Las' week Ah falls on a buzz saw an' Ah busts it—com-plete-ly.

Rambo—Call dat hard? Listen, man. Ah scratches de bath tub.—The American Legion Weekly.

Couldn't Hold It—The station master, hearing a crash on the platform, ran out of his room just in time to see the express disappearing around the curve and a dishevelled young man sprawled amid several overturned milk cans and the contents of his travelling bag.

"Was he trying to catch the train?" asked the station master of a small boy who stood by admiring the scene.

"He did catch it," said the boy, happily, "but it got away again."—Chicago Herald and Examiner.

Motor Inns—"What sort of a time is your friend having on his motor tour?" "Great! I've had only two letters from him—one from a police station and the other from a hospital."—The Bulletin (Sydney).

Etiquette of the Road—Even if it is a good deal of trouble, motorists usually can avoid some additional trouble by stopping as soon as possible after hitting a pedestrian. And, besides, ordinary manners demand that he stop; the pedestrian nearly always does.—Kansas City Star.

Answers the Purpose—Gouty Grandparent—What was all yon noise about?

Girl—Oh, I was only singing to kill time.

Gouty Grandparent—Weel, ye hae a verra guid weapon for the purpose.—Punch.

Mere Matter of Form—Clancy—"Oi want to get a first-class ottymobile for me wife."

Auto Dealer—"Long body?"

Clancy—"Begorra, no! She's built like a barrel—but pwhat's that got to do with it?"—Boston Transcript.

Safety First—Wife: What shall I wear at the ball?

Husband: How about clothes?

Child Logic—Little Ethel had had a fortnight in the country for the first time in her life. "Did you see them milk the cow, Ethel?" asked her mamma on her return.

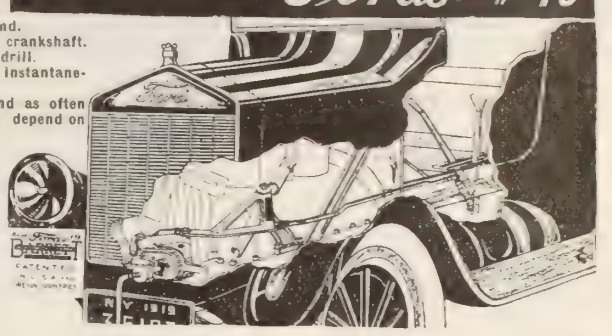
"No, mamma," was the reply, "but I saw them unmilk her."—Sphere (London).

Simple, Durable, Economical, Reliable,

BARRETT SELF STARTER AND PRIMER

GUARANTEED FOR FIVE YEARS — For all Fords — $40

RELEASES automatically in case of backfire and does no harm to the operator, engine or starter.
No cables, no chains, no pulleys and no springs to wind.
75% increase of leverage on crankshaft.
Easy to install, no holes to drill.
It STARTS COLD ENGINE instantaneously even in zero weather.
Ready for starting any time and as often as wanted because it does not depend on the running of the engine for power.
All essential parts made of the very best steel.
ABSOLUTELY NOISELESS.
Not a luxury but a necessity.
Endorsed by prominent automobile engineers and mechanical Ford experts as mechanically perfect in every respect and the best that has come under their observation.



The Special Primer which is supplied free with every Starter, vaporizes the gasoline direct into the cylinders, assuring a quick, positive start. The Primer is also operated from the seat.

From agents or direct from
IMPERIAL AGENCIES, 195 Victoria St., TORONTO

GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

For Sale
TWO GOOD OFFICE SAFES
For particulars
See advt. on page 22.

Agents Wanted
For the MARMAC POWER-DRIVEN TIRE PUMP. Provides free air for the automobile at all times. Good proposition to agents. Write—
Martin Machine Co., Hamilton, Ont.

Dealers, Attention!
Get our proposition on
Portable Saw-Mills,
Gang and Single Edgers,
Gasoline and Kerosene Engines,
Buzz-Saws, Pump-Jacks,
Emery-Grinders,
Water Bowls,
Plow-points, etc.
GRAY IRON AND BRASS CASTINGS
The Cochran Foundry and Machine Works
TILLSONBURG :: ONT.

Our Springs
MADE— TO-STAND-THE-TEST—

Building springs for new work in the manufacturing of Cars, Carriages or Trucks. All A.1 material used, Plus workmanship of the highest quality.

Repairing springs is a specialty of ours on all kinds of Cars and Trucks. We guarantee satisfaction. This specialty of ours can be of service to you. Write us for particulars, we will tell you how.

Cozens & Maynard, 4-6 Wood St., Toronto

CANADIAN Motor, Tractor and Implement Trade Journal BUYERS DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

AUTO ACCESSORIES
Acton Tool & Stamping Co., Toronto.
Geo. H. Broughton Co., Toronto.
Brown Engineering Corp'n, Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Cozens & Maynard 4-6 Wood St., Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
Martin Machine Co., Hamilton.
Motor Mart of Montreal, Montreal, Que.
Shaw Auto Salvage Parts Supply Co., Toronto.
Cochran Foundry and Machine Works, Tillsonburg, Ont.

AUTOMOBILE LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE CHAINS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILES
Motor Mart of Montreal, Montreal, Que.

AUTOMOBILE TIRES
Ames, Holden, McCready, Montreal.

BARN EQUIPMENT

BEAN MACHINERY

BEET MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BEARINGS

BINDERS
Birdsell Mfg. Co., South Bend, Ind.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING

BATTERIES

CARRIAGES

CREAM SEPARATORS
De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS

CORN HARVESTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CORN MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Peter Hamilton Co., Ltd., Peterboro, Ont.

CULTIVATORS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CUTTERS

DAIRY SUPPLIES
De Laval Co., Ltd., Peterboro.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

DIES

DISCS

DITCHING MACHINES

DRILLS, TWIST

DRILLS, GRAIN
International Harvester Co., of Can., Ltd., Hamilton, Ont.

ELECTRICAL EQUIPMENT

ENGINES
Cochrane Foundry and Machine Wks. Tillsonburg, Ont.
R.S. Griffith, 371 St. James St. Montreal
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

ENSILAGE CUTTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

FEEDERS

FARM MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

FEED CUTTERS
Peter Hamilotn Co., Ltd., Peterboro.

FENCE POSTS

FENCING

GRAIN BLOWERS.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

GRINDERS
International Harvester Co., of Can. Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
S. Vessot & Co., Joliette, P.Q.

HARROWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HAY LOADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HAY RAKES

HAY CARRIERS

HAY PRESSES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HULLERS (Clover)

LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

LIGHTING SYSTEMS
R.S. Griffith, 371 St. James St. Montreal
R. A. Lister Co. (Canada), Ltd., Toronto

LIME AND FERTILIZER SOWERS

LUBRICANTS
Canadian Oil Co., Toronto.

MACHINE TOOLS
Windsor Machine and Tool Works, Windsor.

MANURE CARRIERS

MANURE SPREADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MARINE FITTINGS

MOWERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MILKING MACHINES
De Laval Co., Ltd., Peterboro.
R. A. Lister Co. (Canada), Ltd., Toronto

MILLING CUTTERS

OILS
Canadian Oil Co., Toronto.

PISTON RINGS
Brown Engineering Corp'n, Toronto.
Burd High Compression Ring Co., Rockford, Ill.

PLOWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER AND LIGHT EQUIPMENT
R. A. Lister Co. of Canada, Ltd., Toronto.

POWER MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER SWITCHBOARDS

POTATO MACHINERY

PULVERIZERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

PULPERS

RAKES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAPERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAMERS

ROLLERS

ROLLER BEARINGS

SCUFFLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SEEDERS

SCALES

SCREW PLATES

STABLE EQUIPMENT

SILOS

STRAW CUTTERS
Peter Hamilton Co., Ltd., Peterboro, Ont.

SLEIGHS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SILO FILLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SOCKET WRENCHES

SEPARATORS (CREAM)
De Laval Co., Ltd., Peterboro.
R. A. Lister Co. (of Canada), Ltd., Toronto, Ont.

SPREADERS, MANURE
International Harvester Co., of Can. Ltd., Hamilton, Ont.

SPARK PLUGS

SPRINGS
Cozens & Maynard, Toronto.

STARTERS
Imperial Agencies, 81 Victoria St., Toronto.

STAMPINGS

TELEPHONE APPARATUS

TRACTORS
Advance—Rumley Thresher Co., Inc., Toronto, Winnipeg, Calgary.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

TRACTOR PLOWS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

TOOLS
Windsor Machine and Tool Works. Windsor.

THRESHERS
Advance—Rumley Thresher Co., Inc., Toronto, Winnipeg, Calgary.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

THREAD CUTTING TAPS

TIRES
Ames, Holden, McCready, Montreal.

TWIST DRILLS

TRUCKS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

WAGONS
International Harvester Co., of Can. Ltd., Hamilton, Ont.

WATER BOWLS

WIRES AND CABLES

J. & J. Taylor's Safes

One J. & J. Taylor Safe, inside dimensions 15 inches deep, 2 feet 6 inches wide, three feet 11 1-2 inches high and fitted with a built in compartment.

PRICE $250.00

One J. & J. Taylor Safe 18 inches deep, two feet 9 inches wide, four feet 5 inches high, fitted with a steel compartment.

PRICE $200.00

Both safes are in good condition and can be bought at a price that will save considerable money to the purchaser.

MacLean Publishing Co., Ltd.
143 University Ave. Toronto

"Hood Tires"

"Are better than Good Tires"

Write us for our booklet showing why Hood Tires should prove more satisfactory and easier selling than all other makes.

We can offer you a splendid dealer proposition.

Some of Our Lines Are:

"Green" Locks. Johnston Tire Locks.
Mazda Bulbs. Norwesco Products.
Motorene Oil, Etc., Etc., Etc.

Protect-O-Cap

The trim outline and graceful curves of the PROTECT-O-CAP, coupled with the protection it affords, make it one of the easiest selling propositions anyone could wish to handle.

Write our accessory department for anything you may desire in auto accessories. If we cannot supply you we will put you in touch with the correct parties.

MOTOR MART of Montreal Limited

Telephone, Plateau 310 - - - - 1-3 Park Avenue, Montreal

SPEDOLENE

A Summer and Winter Car Lubricant that Readily Sells

We Help You to Sell It

Get Our Dealer Offer

When you link up with us we don't merely fill your orders—we give you thoughtful co-operative service to keep the sale of SPEDOLENE on the go the year 'round. Spedolene's popularity has been built up on service, a service that starts from us to the dealer and that in turn reaches out to the motorist through the unequalled merits of the product. Remember, SPEDOLENE is the only lubricant containing asbestos—the secret of its wonderful heat-resisting qualities.

You'll Like Our Dealer Proposition

Spedolene Refining & Mfg. Co., Ltd.

MONTREAL

We have taken on the distribution of

USL TRADE MARK
STORAGE BATTERIES

Write us for exclusive Service Station Proposition

Keyes Supply Co., Limited

OTTAWA, ONT.

Tel. Q. 880 Connecting all Departments

NEWS — OF THE TRADE FOR THE TRADE

ALBERTA

BLACKIE:—R. Wilkinson is an implement dealer here, handling the International Harvester line.

SPRING COULEE:—The Spring-Coulee Trading Co., are handling all kinds of farm implements. They report business being good.

BASHAW:—Torpy and Paulson, automobile and implement dealers, have taken into their line the Ford agency formerly conducted by R. Zachary.

EDMONTON:—Wolfe's Auto Service and Filling Station is a new business opened here. They handle accessories, tires, tire service, crankcase service and oils.

EDMONTON:—The Mor-West Motors, distributors for Chevrolet cars, have moved into new premises. The old garage is still being used as a garage and service station. A feature of the new show-room, which is 25x125, is a section fitted up with lounge chairs tables and magazines, etc. for the convenience and comfort of visitors.

BRITISH COLUMBIA

EDMONDS:—Thieves entered the Burnaby garage recently and rifled the cash register.

VANCOUVER:—The Hayes-Anderson Motor Co., have been appointed Ruggles truck distributors for British Columbia.

VICTORIA:—The Rivercomb Motor Company and the Kilpatrick-Moryson Motor Company, have amalgamated. The new firm will be known as the Rivercomb Motors Limited.

VANCOUVER:—Standard Motors, Limited announce the appointment of Harry Floyd to their sales force. Mr. Floyd, who was overseas with the Royal Air Force, is a native of Vancouver.

MANITOBA

BROOKDALE:—Clegg and Lawrie, implement dealers, have dissolved partnership. H. C. Clegg will continue

PORTAGE LA PRAIRIE:— Partnership between McDougall and Machan, implement dealers, has been dissolved. In future the business will be carried on by Mr. Machan.

WINNIPEG: — The Consolidated Motors, Ltd., have moved into new quarters at 235 Main street. They have the Chevrolet agency and handle all repairs, accessories, oils, etc.

Winnipeg—Announcement is made by Dodge Bros., Detroit, of the appointment of the Archibald Martin Motor Co., as their dealers in Winnipeg. The company will occupy premises on Portage Avenue with a complete salesroom.

ONTARIO

TORONTO:—The Kennedy Taxi Co. are erecting a new garage at a cost of $29,000.

PETERBORO:—Dawson and Johnston are operating a new vulcanizing business.

Collingwood—F. C. Nixon has been appointed agent in this district for the Oldsmobile car.

ST. CATHARINES:—H. C. Coysler, automobile repairer, has installed a Landis cylinder grinder.

WINCHESTER:—W. N. L. Lannin automobile dealer, is erecting a new building for garage and hall at a cost of $25,000.

KINGSTON:—The Watkins Manufacturing Co., whose headquarters are in Kansas, is establishing a Canadian branch here. The company is engaged in re-babbiting worn out bearings of machines, automobiles and tractors. Ex-Mayor J. M. Hughes, of Kingston is general manager for the Canadian branch.

BRIDGEBURG : — The Canadian Wool Co. are establishing a factory here.

DURHAM: — J. Smith, of Smith Bros., automobile and power farming dealers, attended the Woodstock plowing demonstration.

PETERBORO:—Dawson and Johnston, vulcanizers, recently installed a new vulcanizing machine embodying many new features.

GANANOQUE:— H. Wilson and son automobile dealers, have moved into new quarters. The new show-rooms are built entirely of brick.

WOODSTOCK:—John D. Kervin, a native of Woodstock, has been appointed assistant manager of the Western division of the Chevrolet Motor Co.

NORTH BAY:—Partnership between Potter and McGahey of the Monarch Garage has been dissolved. The business in future will be conducted by G. F. Potter.

SARNIA:—The International Garage has been taken over by Sarnia Motors who will specialize in all kinds of repair work and handle the Studebaker and Overland cars.

CHATHAM:—That a big saving was effected by the purchasing of the motor street flusher this year was shown recently by Ald. Fitzsimmons of the Board of Works, when he produced the cost of the work for the past two years. This year the cost of cleaning and flushing the streets was $6,480, as compared with $15,500 for the same work last year.

WHITBY:—Early in the morning of Oct. 11 fire destroyed the implement and hardware stores conducted by H. A. Lebar. Stock in both stores to the value of $8,000 was destroyed.

TORONTO:—The Massey-Harris Co. announced recently the death of L. D. Collins, treasurer and general manager of their branch at Batavia, N. Y. Mr. Collins died on Sept. 17 while on a visit to London, England.

WINDSOR:—Frank Mancekivell, for the past five years traffic manager of the Ford Motor Co., of Canada, with headquarters at Windsor, has resigned from that position to become district distributor for the Ford Co. at Brantford.

BRANTFORD:—Partnership between Edward Hunter and Walter Oliver in the automobile business conducted under the name of Hunter and Oliver has been dissolved. The business in future will be carried on by Edward Hunter.

OWEN SOUND:—J. Krentzweiser & Son are planning to build a new garage to replace the one they now occupy. The building to be erected will be 150 x 38 and will occupy the site of the old building. It will be of modern construction and complete in every way.

WOODSTOCK:—"Ed." Fowell, proprietor of the John Fowell & Son, farm machinery business, Woodstock, gave demonstrations of the "Papec" cutting box, on all three days of the Woodstock plowing match. "Ed" told M. T. I. representative business was good.

TRENTON:—Trenton ratepayers recently voted in favor of granting a bonus of $25,000, a free site, and a fixed assessment, to the Anglo American Motors, Limited. Under the agreement the company will erect the first two units of its plant without delay, and other units will be added as progress is made.

Ottawa—The German Motor Co., have been appointed distributors for the Italian Fiat, the Mitchell Six and the Winton Cars.

ST. CATHARINES:—Llewelyn Hall, of Hall Bros., farm machinery dealers, attended the Ontario Plowmens' Association plowing match at Woodstock. Mr. Hall informed the M.T.I. representative that his business during the year has been remarkably good and has maintained the record set during the first three months of the year.

QUEBEC

MONTREAL:—Bramson's Auto Service, Ltd., are erecting a large six story garage.

MONTREAL:—A new garage will be erected here by G. Shagori, 93 Vitre St. E.

HULL:—Announcement has been made by Mr. St. Jean, secretary of the Hull Publicity Commission, to the effect that a specialty motor car manufacturing concern is likely to establish a plant in Hull. The new firm is backed by a syndicate of Montreal and Toronto interests, and is capitalized at $250,000.

SASKATCHEWAN

SASKATOON:—W. S. Macauley is distributor in the Saskatoon district for Oldsmobile cars.

ANEROID:—J. Jacket has purchased the implement business formerly conducted by J. Ormstead.

HAGUE:—A tractor and automobile repair and accessory business is being operated here by P. J. Clausen.

DARLINGFORD:—McCormick and Smith are now operating the farm machinery business formerly conducted by E. H. Stevens.

LIMERICK:—The automobile and tractor business conducted by G. Lundbloom, has been purchased and will be operated by S. Smith.

With the Manufacturers

The Hamilton Tool Co., Hamilton, Ont., are manufacturing a new type of motor truck radiator.

The Imperial Oil Co. have let contracts for the erection of a service station at 50 Church St., Toronto.

The McLean Machine and Tool Co., of Hamilton, Ont., are manufacturing a new line of electric welding machines.

The Canadian Automatic Carburetor Co. will establish a plant at the corner of Royce Avenue and Dundas Street, Toronto.

E. W. B. Snider, president of the Waterloo Manufacturing Co., Waterloo, Ont., died recently at his home in Waterloo.

The F. F. Barber Machinery Co., Toronto, have secured the Ontario agency for the Landis Tool Co., Waynesboro, Pa.

The Wonder Tractor of Canada, Ltd., Montreal, Que., has been incorporated with $90,000 capital to manufacture agricultural implements.

Adams Axle Co., of Findlay, Ohio, have closed a contract with Durant Motors to manufacture all axles and brake bands for the new Durant cars.

F. H. Chapman, who for a number of years was president of the Ontario Wind Engine and Pump Co., died suddenly at his home in Toronto on Nov. 3.

The Triumph Motor Equipment Co., with headquarters in Hamilton, has been incorporated with a capitalization of $250,000 to manufacture and sell motor trucks and equipment.

The Canadian Detroit Twist Drill Co., Walkerville, Ont., have issued pamphlets describing their line of drills. The construction and proper method of grinding is given.

The American Bosch Magneto Corp. announce the appointment of George Shortmeier as manager of their branch at New York. C. L. Shedd has been made branch manager at Detroit.

The Minerva Engine Co., Cleveland, Ohio, have purchased a factory and are equipping it for the manufacture of tractor and truck engines.

The Auto-Lite Co., according to a contract entered into with Durant Motors of Canada, will establish a Canadian factory to manufacture starting and lighting equipment.

Goo and Patrick, Ltd., manufacturers and distributors of automobile skid chains, have opened a show room at 437 Bleury street, Montreal, under the management of H. G. Boswell.

The name of the Standley Skid Chain Co., of Boone, Iowa, has been changed to the Standley Manufacturing Co. They will continue to manufacture and sell automobile equipment.

Pressure Proof Rings, Ltd., Sherbrooke, Que., whose premises were gutted by fire some time ago, have moved into their new factory at the corner of Drummond and Short Streets.

Executive offices have been opened in the Royal Bank Building, Toronto, by the Durant Motors of Canada. Mark Daniel has been appointed assistant secretary of the Canadian executive.

The Black & Decker Mfg. Co. have established a credit system whereby any person in the United States or Canada can purchase Black & Decker equipment on six months terms without extra cost.

Red Arrow tires, Ltd., is the name of a new company which will establish a plant in Peterboro, Ont. It is expected the first unit of the factory will be in operation by next spring. The company will be incorporated at $2,0000,000, to manufacture tires and tubes.

H. A. Harrison, 220 King St. W., Toronto, has secured the exclusive Canadian agency for the Critchley expanding reamers which are manufactured by Chadwick and Trefathen, Portsmouth, N.H. U.S.A.

Michael M. Matthews, manager for the Oliver Chilled Plow Works at San Francisco, died at his home there Oct. 15. Mr. Matthews was one of the oldest members in point of service of the Oliver organization.

Col. R. S. McLaughlin, President of Canadian General Motors, accompanied by his wife sailed for England to attend the Olimpia Motor Show at London, where cars made by General Motors will be on exhibition.

The Bassick Mfg. Co., of Chicago, manufacturers of the Alemite High Pressure Lubrication System, have instituted suit against the Ireland and Matthews Co., of Detroit, for alleged infringement of the Alemite patents.

The National Steel Car Corp. announce the appointment of T. A. Dawson, of Hamilton, as manager of their new Montreal branch. Mr. Dawson has been connected with the Packard Ontario Motor Car Co., in Hamilton.

Announcement is made by A. L. Caron, of Caron Bros., Montreal, after a conference in Toronto with W. C. Durant, president of Durant Motors of Canada, Ltd., that the new corporation is considering the establishment of a factory in Montreal which will employ 2000 men.

The Waltham Motor Corporation of Canada, with head office in Toronto, have purchased the property of the Barrie Carriage Company, Barrie, Ont. The company expects to move into the carriage factory in a short time and to be turning out trucks by the beginning of 1922.

R. C. Brewsaugh, associate sales manager and advertising manager of the tractor division of the Allis-Chalmers Mfg. Co., Milwaukee, has returned to Milwaukee after a tour of eight weeks on the Pacific coast and south-west of the United States and in Western Canada. He reports an optimistic feeling among dealers and predicts a prosperous year in 1922.

AMES HOLDEN

"Grey Sox" and "Red Sox" Tubes

add to the mileage given by "Auto-Shoes"

AHM System

To Know Tires ---Make This Test

Try one Ames Holden AUTO-SHOE on your south-east wheel. Put the best other tire you know on the other wheel. After five, ten and fifteen thousand miles —compare the wear—if the other tire is still in service. Let your own speedometer decide tire value and show you how little AUTO-SHOES cost per mile.

Many AUTO-SHOES that have run over 15,000 miles are still in service—good for thousands of miles more. This better mileage means the better tire value that all motorists are looking for.

If You Sell Tires

Your customers are learning about AUTO-SHOE lower cost per mile—and cost per mile is the basis on which they are buying tires.

More mileage, the "satisfied customer" guarantee and the unusually generous dealer policy should be sufficient inducement for you to ask our nearest Sales Office about the opportunity there is in your district for bigger tire business with

AMES HOLDEN "AUTO-SHOES"

CORD AND FABRIC TIRES MADE IN ALL STANDARD SIZES

Manufactured By

AMES HOLDEN McCREADY LIMITED

HALIFAX, ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, LONDON, WINNIPEG, REGINA, SASKATOON, EDMONTON, CALGARY, VANCOUVER

A Countrywide Landslide for Wilkie

"WILKIE" Piston Rings

Why?— Because in the one and only test of actual comparison the tight-fitting seal made by these scientifically constructed Piston Rings has proved to thousands that Wilkie Rings represent true economy and true freedom from piston ring troubles. After costly experimenting, Service Stations, Garages, Motor Manufacturers and Motorists have turned to "Wilkie" Rings. The Packard Montreal Motor Company sets an adequate example by adopting "Wilkie" Rings exclusively.

Scientifically made with a one-piece joint

"Wilkie" Piston Rings have made money for all dealers who have handled them. Tight-fitting, easily applied, free from defects and flaws of any kind, "Wilkie" Rings have helped to bring an increased number of permanent customers wherever sold.

These possibilities may well be yours. Examine our price list below and send for sample rings.

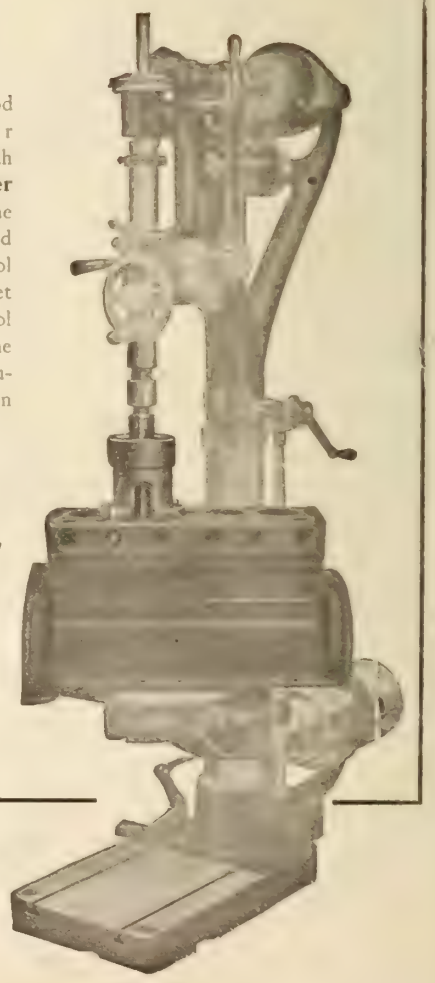
"Wilkie" Price List

Size		Price
Up to 3⅜ x ¼	1	$ .25
Up to 3¾ x ¼	1	.30
Up to 4 in. x ¼	1	.35
Up to 4½ x ¼	1	.40
Up to 5 in. x 5/16	1	.45
Up to 5½ x ⅜	1	.50
Up to 6 in. x ½	1	.55

Above prices are for standard sizes in width and diameter
Larger sizes quoted on

BUSINESS is good these days for shops equipped with a **Universal Cylinder Reboring Tool.** The steadily increasing demand for a staple Reboring Tool is being adequately met by the Universal—the tool used and endorsed by the leading automobile manufacturers. Get information without delay.

UNIVERSAL REBORING TOOL



Windsor Machine and Tool Works

312-316 Pitt Street W., Windsor, Ont.

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Published Monthly by THE MACLEAN PUBLISHING COMPANY, LIMITED, TORONTO

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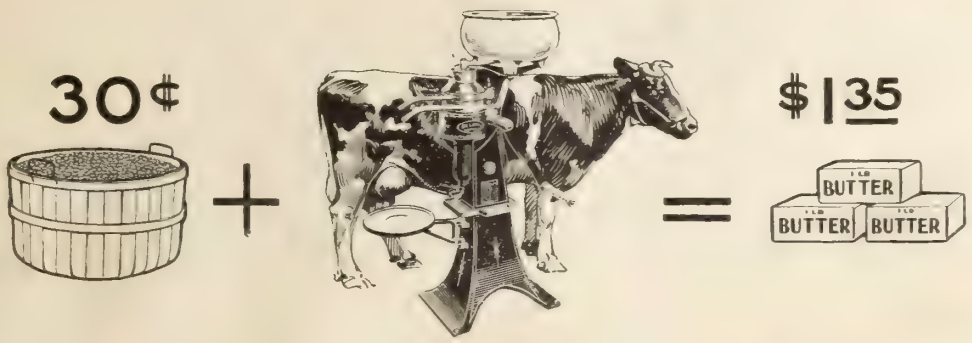


The Dairy Cow is a Godsend

In more ways than one the dairy cow is proving herself a veritable godsend.

She turns a bushel of 30-cent corn or its equivalent into three pounds of butter worth from $1.00 to $1.50. She is the most profitable means of marketing farm crops. She brings in a steady cash income. She removes less fertility from the soil than any other farm crop.

In every community where cows are milked, there you will find prosperity and De Laval Cream Separators and Milkers. Prosperity and De Laval are synonymous.

Therefore push De Laval Separators and Milkers, the most efficient, most widely used, most popular products of their kind.

De Laval Separators and Milkers are moving freely. Prices are practically on a pre-war level. They are better for the farmer to use and more profitable for the dealer to sell than ever before.

There is still room for more good live agents. If we are not adequately represented in your community, get in touch with us at once.

THE DE LAVAL COMPANY, Ltd.
MONTREAL PETERBORO WINNIPEG EDMONTON VANCOUVER

The De Laval Milker

Both save time and eliminate drudgery twice a day, 365 days a year.

Both increase the quantity of the product.

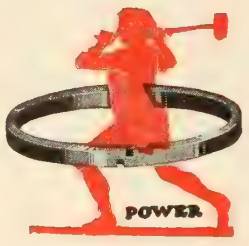
Both improve the quality of the product.

Both are made by De Laval, the oldest, largest and best-known manufacturers of its kind in the world.

The De Laval Separator

Sooner or later you will sell the
De Laval

Gill



One-piece Piston Rings

reduce fuel consumption

because: they are individually cast from a special gray iron that retains its tension, elasticity and vitality under all the intense heat and terrific stress and strain of piston ring service. Gill Piston Rings, under all conditions and for thousands of miles, exert an all-around, uniform, leakless contact with the cylinder walls. They hold *all* of the fuel in the combustion chamber where *all* of it can be compressed into power. Where there are Gill Rings there is no waste.

MADE IN CANADA BY

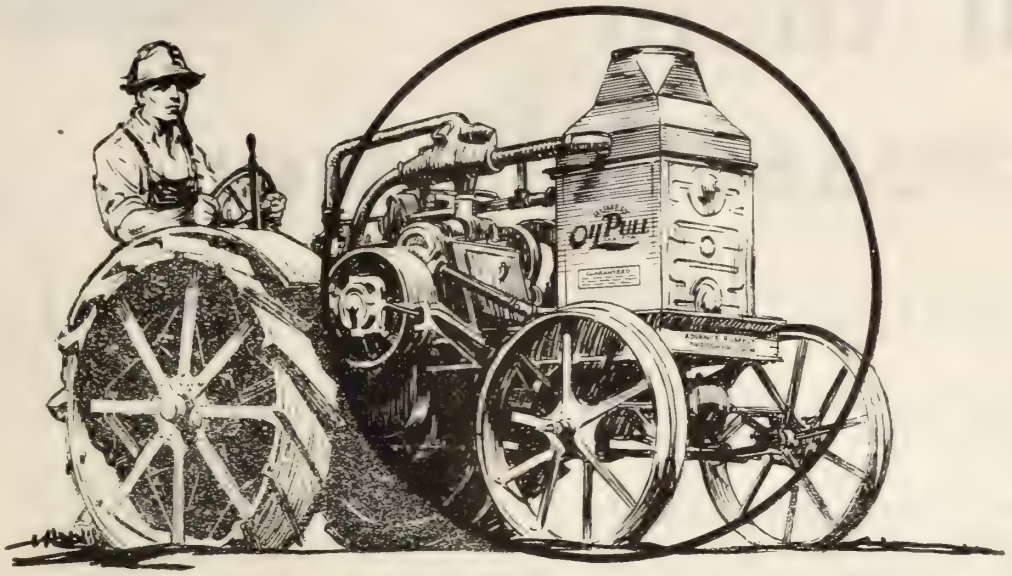
BROWN ENGINEERING CORPORATION, Limited
415-419 King Street, West Telephone Adelaide 425
TORONTO, CANADA

Identify the Gill One-piece Piston Ring by the joint, but do not measure its merit by the joint *alone*.

Gill Piston Rings are obtainable for every make of internal combustion engine manufactured. In case you are unable to secure Gill Rings, we will be glad to furnish you the name of the nearest Gill Jobber.

Stocks carried in all the principal cities and towns of Canada by Canadian General Electric Company, Limited

OILPULL TRACTOR



Triple Heat Control

—the final step in kerosene burning—

Now on All OilPull Tractors

ALL experts know that a gallon of cheap kerosene contains more power than a gallon of expensive gasoline. The problem has always been *to get the power out of the cheap kerosene.*

That OilPull Tractors operate on least fuel—require least upkeep expense and average 10 years and more of service is due to Triple Heat Control, a scientific system of oil burning by means of which the maximum amount of power is gotten out of cheap kerosene.

Triple Heat Control has solved the problem of controlling motor temperatures. In the famous OilPull oil-burning motor, the temperatures are maintained between those exact limits where kerosene gives most power at least expense. The motor is never too hot—never too cold. Cannot boil—cannot freeze.

Because of this scientific system an OilPull Tractor has held the Official Fuel Economy Records for 10 years. Also the OilPull is the only kerosene tractor that you can sell with a *bona fide* guarantee to burn kerosene successfully under all conditions and at all loads up to its rated horse power.

There is no doubt that Triple Heat Control—found only in the OilPull Tractor—has solved the problem of "cheapest farm power."

There is no doubt that the OilPull, with (1) lowest fuel cost,(2) lowest upkeep expense and (3) longest life, offers the farmer just the service he wants.

Triple Heat Control—the one important advance in tractor design for many years—will very soon be an important subject of discussion among farmers everywhere. You should know all about it. Our new booklet tells the story. A request will bring a copy free.

There are valuable contracts available for the progressive dealers in certain territories. Write for information about your territory.

Advance-Rumely Thresher Co., Inc.

48 Abell St., Toronto, Ont. Calgary, Alta. Regina, Sask
Saskatoon, Sask. Winnipeg, Man. (H64)

Serviced through 29 branches and warehouses

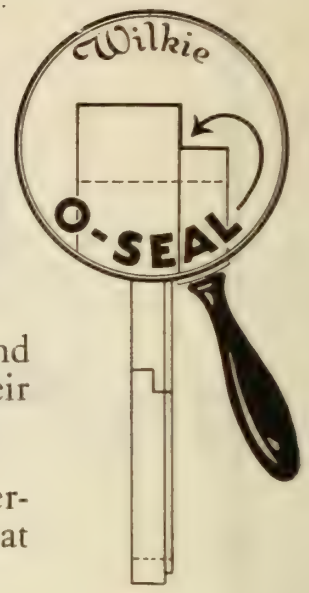
The Advance-Rumely line includes kerosene tractors, steam engines, grain and rice threshers, alfalfa and clover hullers and farm trucks.

RUMELY OilPull TRACTOR LA PORTE IND.

ADVANCE-RUMELY

Wilkie

Sell them Increased Power

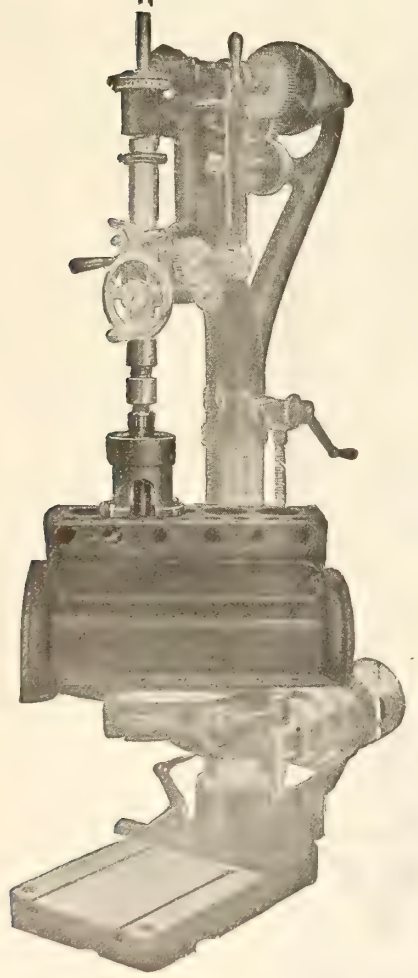


You are selling increased power when you supply Wilkie Step-cut Piston Rings.

Wilkie Rings are manufactured from the very finest materials and by a process that insures a perfectly round ring.

Wilkie Rings seal tight against the escape of compression and eliminate oil pumping. Your customers get more power from their engines after "Wilkies" have been installed.

Keep in mind that in installing piston rings you are selling a service—increased power is what your customer is after. Make sure that he gets it—give him *Wilkie Piston Rings.*



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Up to 4½ x ¼	1	.40			

Above prices are for standard sizes in width and diameter.
Larger sizes quoted on.

You can't afford to pass up business to-day

The average four-cylinder block can be rebored by a Universal Cylinder Reboring Tool in about an hour and a half. If you have a "Universal" you need never turn business away because "it will take too long." And when a job is finished by the "Universal" you have earned the right to feel proud of your work and your establishment.

This tool is used and recommended by the careful manufacturers of Ford, Dodge, Studebaker, Buick, Page-Detroit and Chalmers cars.

It can be operated either by hand or in conjunction with a power-driven drill press. It does more accurate work in less time.

Equip your shop to take care of all the business that can be induced to come your way. Put in a Universal Cylinder Reboring Tool and let your customers know you can save them time and money.

Do not hesitate to ask us for any information you may need on Wilkie Piston Rings and Universal Cylinder Reboring Tool.

WINDSOR MACHINE and TOOL WORKS

312-316 PITT STREET, WEST WINDSOR, ONTARIO

CANADIAN
MOTOR, TRACTOR AND IMPLEMENT
TRADE JOURNAL

Volume 3 TORONTO, DECEMBER, 1921 No. 12

Atmosphere of Better Business At Automotive Equipment Show

Buying at the A. E. A. Exhibit Better Than Last Year and Shows the Equipment Business on the Up-grade. "Ask 'Em to Buy" Slogan Much in Evidence

By C. M. McLENNAN

ATMOSPHERE is a rather intangible quantity and difficult to define, but it was the biggest feature of the annual convention and show of the Automotive Equipment Association, held in Chicago Nov. 14 to 19. It was a buying "atmosphere," and anyone who attended the 1920 show will realize what that means. Last year everyone was crying the business blues. There was no money in sight. Crowds there were, but they were anything but enthusiastic. They had come through the first round of their bout with depression, and were rather dazed. This year they were eagerly seeking the dotted line. That's the difference that lies between the twelve months. And what impressed us more than anything else was the fact that in spite of woeful predictions made last year, practically all the same old faces appeared this year. If there were any failures during the period, no one could notice it. Everybody is doing business at the same old stand. And to judge from the talks we had with many jobbers and manufacturers, business is GOOD. It was an atmosphere of "good business" that permeated the show.

Undoubtedly a lot of this business was the result of Ray Sherman's "Ask 'Em to Buy" campaign, inaugurated at the meeting in Mackinac last July. This campaign has been fully described in our pages before, but it was the keynote of the convention, and we will make some rather detailed references to it. It is now planned to extend it to cover a program of education of jobber salesmen on the correct methods of selling shop equipment, and of dealers and garagemen on the profits accruing from the use of labor-saving devices.

Mr. Sherman, who is merchandising director of the association, gave a splendid address before the convention, and the program laid out was heartily endorsed. His talk was practical and illuminating, and it was reinforced by motion pictures. Sales promotion and merchandising methods were the real issues before the convention, and more will be said about Mr. Sherman's program later on. His address and the showing of the picture had an immediate effect, however, because it stimulated salesmen at the show, and actually helped them to present their propositions more forcefully. It also impressed jobbers with the wisdom of replenishing their stocks, which have been going through a depletion process for months. One exhibitor did $42,000 worth of business in a single day, these two factors combining to make such a feat possible.

Just prior to adjournment of the show, Commissioner W. M. Webster asked the delegates if they were satisfied with results in the way of information, inspiration and business, and if they looked into the future with more confidence, and the answer everywhere was "YES," shouted enthusiastically from a thousand throats. It is significant that most jobbers report retail sales as on the upgrade since October 1, when sales of these commodities usually shrink about September 1. This sentiment came from all parts of the United States and Canada. Turnover, on the average is about 85 per cent. of last year to date, and about 70 per cent. of 1920 in dollars and cents, the difference creditable to a decrease in prices. This made a sharp contrast when jobbers wholesaling other lines stated that business in these other lines was not more than 50 per cent. of last year.

W. R. MONCUR,
of Cutten & Foster, Toronto, new president of the Canadian Automotive Equipment Assoc.

Attendance at both the show and convention was the largest in the association's history, there being well over 1,000 at the show and between 500 and 600 delegates and alternates at the convention.

Canada was exceptionally well represented, there being jobbers and dealers from all parts of the Dominion. This was commented on by many American manufacturers. Practically all the lines exhibited at the show are being merchandised in Canada through the many splendid Canadian jobbing houses, practically all of whom had one or more representatives at the show.

The only strictly Canadian exhibit was that of the Canadian National Carbon Company and their booth was more a headquarters for Canadian visitors than it was an exhibit. Virtually all the Canadians at the show just naturally gravitated, at one time or another, to this booth, where a large Canadian flag was suspended.

Mr. MacKenzie, General Sales Manager, and Chas. F. Welch, Division Sales Manager, were in attendance at the booth.

The association voted to hold the 1922 convention and show at the same place, Nov. 13 to 18. It is anticipated that the second as well as the first floor of this immense arena will be taken up by exhibitors. A few were crowded out this year owing to lack of space. The summer convention will be held at Colorado Springs June 19 to 25.

The Exhibits

The exhibits, numbering around 200, were as varied and unique as they were numerous. Practically every accessory made was shown. There was a lot of straight equipment shown also, and a considerable display of garage tools and equipment. There were several new products, but space forbids a description of these here. They will be described and illustrated in these columns from time to time throughout the year in the automotive accessories and equipment department.

One of the most unique displays was that of the American Hammered Piston Ring Co. They showed an ingenious peening machine that makes the ball peen hammer marks on the inside of their famous ring. This gives the ring uniform tension.

Another interesting display was that of the Raybestos Co., which comprised a weaving machine. Raybestos brake lining was actually manufactured in the booth.

The Champion Spark Plug Co. had an electric sign device in their booth which attracted considerable interest. This machine displayed moving electrically lighted signs which featured the "Ask 'Em to Buy" campaign.

New Members Admitted

New members admitted into the association include: American Bosch Magneto Corp., Springfield, Mass.; Outlook Co., Cleveland; Air Reduction Sales Co., New York; Walker Accessories Inc., Chicago; Farran-Kinney Co., Chicago; Benzer Corp., Brooklyn; J. D. Bridges Co., Florence, S. C.; Sparks-Withington Co., Jackson, Mich.

OFFICERS OF CANADIAN AUTOMOTIVE EQUIPMENT ASSOCIATION FOR 1922

The Canadian Automotive Equipment Association at a special meeting of the A.E.A. in Chicago elected the fol'owing officers: W. R Moncur, of Cutten & Foster, Toronto, President; E. J. Banfield, of McQuay, Norris, Banfield Co. of Canada, Vice-President; J. Drayton, of Canadian Fairbanks-Morse Co., Chairman of Trade Promotion Committee; H. Irwin, of Canadian Raybestos Co., Chairman of the Membership Committee. The Canadian members decided not to hold an equipment show in Toronto this winter.

Sales Promotion Plan Designed To Help the Dealer to Sell

SALES promotion was the dominating issue of the convention, and this movement which originated at the Mackinac Island meeting in July was given fresh impetus at the Chicago meeting and it was recognized by all members of the association that for the good of all—manufacturers, jobbers, and dealers—its continuance must be assured. Ray W. Sherman, merchandising director of the association, pushed the idea to the limit, illustrating his talk with motion pictures which depicted how a jobber salesman changed what seemed certain failure for a garageman to success by demonstrating to him the profits in automotive equipment merchandising as it could be practised in his own garage. This particular film was the best assistant Mr. Sherman could have had to help him impress the idea upon the minds of those who listened to his address, because while the acting was professional and above criticism, the story was based on fact.

At the conclusion of the address and picture presentation pushing the sales promotion idea at the opening session of the convention on Monday, manufacturers and jobbers and their sales executives who heard and saw it were unanimous in their opinion that the idea first sold at Mackinac had been resold in a manner many times as effective, and it was generally agreed that much credit was due to Director Sherman and the special sales promotion committee. The whole sales promotion program is built around the request that the manufacturer and jobber is making of the retailer—"Ask 'Em to Buy"—which request demands nothing extraordinary in the way of solicitation, but is based on the oldest of sales fundamentals—asking people to buy merchandise.

A Plan of Co-operation

Director Sherman concluded his presentation with a direct appeal to manufacturers and jobbers for real leadership in the campaign—their campaign and the industry's campaign.

Of the manufacturers he asked:

1.—That they do everything possible to make their products saleable by putting into them the greatest possible value and utility, and that they get into their advertising information as to HOW THE DEALER CAN SELL THE PRODUCT instead of merely telling him what it is and how good it is.

2.—That they give the campaign the active support of their sales representatives, who, he said, should supplement the work of the association in carrying the promotion idea to jobbers and their salesmen, and should back up jobber salesmen, wherever possible, in putting the story before the dealers.

Of the jobbers he asked:

1.—Active participation by their sales executives in the campaign, to assure the jobber salesmen that their employers are for the movement and the salesmen's participation in it.

2.—Co-operation with the merchandising department of the A. E. A., and with state, county and local dealer associations to utilize all possible gatherings of automotive men to carry on the "Ask 'Em to Buy" propaganda.

Mr. Sherman pointed out that no field organization of the association, no matter how extensive, could make the campaign move, it all depended on the efforts of the jobber salesman who must do the greater part of the work by showing the dealer his automotive equipment sales possibilities and helping him to realize on them.

Vast Possibilities of Automotive Equipment Business

Mr. Sherman was introduced to the meeting by Robert A. Stranahan, retiring president of the association and chairman of the permanent sales promotion committee. He said that the sales promotion work was the most important ever undertaken by the association, but that its success depended on every member of the association working for it. Mr. Sherman put the annual possibilities of the automotive equipment business at $250,000,000 based on an estimate of $25 per car for 10,000,000 cars in the United States and Canada. Only dealers, car dealers, repairmen, garagemen and gas and oil men, can get this business from the car owner, and it is through lack of energy in going after sales on the part of these that the necessity has arisen for this sales promotion campaign. *So many dealers are content just to know that they have the merchandise in stock—they think it is sufficient to have the goods in case they are asked for them, but the great thing is to get these goods off the shelves, and that is what the sales promotion committee has set itself to accomplish.*

Mr. Sherman then went on to explain that the more expensive suggestions for field work by a large staff and by direct mail had been rejected in favor of approach by the jobber salesman who was acquainted with the dealer, came in contact with him frequently and knew the local market and its possibilities.

How the Program is Carried Out

The campaign is organized on this basis:

1—The merchandising director and one or two assistants are covering the country as fast as possible, showing groups of jobber salesmen, at meetings, how to get the plan before dealers. Dealers also are included in meetings, wherever possible, and already more than 2000 people in the wholesale and retail trade have heard the story.

2—The merchandising director's talks hereafter will be illustrated with the film, "Ask 'Em to Buy," as will the talks of his co-workers, including jobber and manufacturer, executives and salesmen, whenever any of the association or privately owned films are available.

3—Headquarters and member representatives will speak at state and local dealer association meetings and at gatherings of dealers during the show season.

4—The Leader, bi-weekly publication of the A. E. A., will keep the movement before members, and the Automotive Equipment Merchandiser, four-page bi-weekly of the campaign, will tell and retell the story to salesmen of both manufacturer and jobber members.

5—The prepared "Ask 'Em to Buy" talk will be furnished to members and their salesmen who will use it to address dealer meetings.

6—The manual on automotive equipment merchandising, "A Better Business," will be furnished to dealers who ask for it, at 15 cents a copy.

The "Movie" Shows How To Do It

One is fairly safe in saying that not many "movies" with all the usual thrills and dramatic episodes, get the undivided attention which this one did. This picture contained no thrills, no vamps, but the theme was just one of every-day life, and into it was worked the story of how a garageman awakened to the possibilities in automotive equipment merchandising. This awakening was brought about by a jobber salesman who instructed the garageman in the correct way to dispose of his merchandise, and the audience watched first the jobber salesman and then the garageman sell different items from his stock to the motorists who drove up for gas. Eventually the garageman became the owner of the largest garage in the town and married the girl he came near to losing because he couldn't make enough on his ordinary repair work to support her. And, as one expects to find in "movies," they lived "happy ever after," and the most noticeable object in the final scene was a baby carriage, completely equipped with windshield, spotlight, bumpers, and various other accessories.

This picture possessed all the more appeal when Mr. Sherman announced that the plot had been obtained from one Ike Daugherty, a salesman for the G. Norman Baughman Co., Tampa, Fla., who explained that he had really found a garageman in very poor circumstances owing to the poor profits obtained through his repair work, and very gloomy because he couldn't afford to get married. Mr. Daugherty was called and amplified Mr. Sherman's announcement by explaining how he had helped the garageman out of the rut and put him on the right road to prosperity.

Rapid preparations for taking the sales promotion work into all sections of the country were made by merging the former state vice-presidents and the committee on assistance to the retail trade into a committee of state vice-presidents, headed by the vice-president of the association. The state vice-presidents will be responsible for circulation of the "Ask 'Em to Buy" movie and for arranging meetings of jobber salesmen and dealers. The state vice-presidents will appoint district chairmen from the various jobbing centres to work under them.

The Southern Automotive Equipment Association bought a film for its own use and several individual jobbers and groups of jobbers have ordered them also to promote shop equipment sales. Interest of garage equipment manufacturers in the sales promotion work was indicated by the attendance of members in this class at a conference with Director Sherman. The conference did not reach a definite conclusion but it was agreed all around that special activities along this line would be undertaken.

It was stated at the convention that about March 1 the association will be ready to distribute a universal catalog intended for the desks of buyers for jobbers, which catalog will have illustrations of products of manufacturer members. This catalog will be copyrighted, and will be issued free to members—manufacturers and jobbers—and will be made up on a basis of about $25 per page for manufacturers co-operating, with a rebate if the cost is less. This book is going to be a handy reference to buyers and is going to prove of assistance to jobbers making up their own catalogs. The catalog is being worked out by a committee headed by William Von Elm of the E. A. Laboratories Inc., assisted by Chas. P. Hughes, A. E. A. secretary of committees.

Freight Rate Problem Discussed

At the manufacturers' divisional meeting a suggestion was made that freight charges be absorbed or equalized so that jobbers at varying distances from the manufacturing centres would not be placed at a disadvantage in handling nationally priced items.

At the jobbers' divisional meeting there was a vote of 104 to 72 in favor of allowing the membership committee to use discretion in interpreting the rule adopted a year ago that only jobbers doing an exclusively wholesale business can be admitted to the association. Since the A. E. A. was formed when many of the jobber members had retail departments there has been a strong trend toward "wholesale only" which led up to the rule adopted last November, but the majority felt that the proposal would help build up the association and improve competitive conditions in some localities. The convention as a whole concurred in the proposal.

The Association's Traffic Bureau has obtained for 69 members during the year $4600 in freight overcharges. Its work will be broadened, and among other things an effort will be made to bring about an amendment of railroad classifications which gives shippers of wagon parts an advantage over firms shipping automobile parts. A suggestion was put forward and referred to the board of directors that a technical laboratory be erected to pass upon replacement parts, products of the industry, and stamp those passing the test with the association's approval.

OFFICERS AND DIRECTORS OF A.E.A. FOR 1922

President, Howard M. Dine, Dine—De Wees Co., Canton, O.

Vice-President, C. C. Gates, Gates Rubber Co., Denver, Colo.

DIRECTORS

W. L. Moncur, Cutten & Foster, Ltd., Toronto.

G. Norman Baughman, G. Norman Baughman Co., Tampa, Fla.

Howard M. Dine, Dine—De Wees Co., Canton, O.

D. A. McConnell, Klax Co., Newark, N.J.

W. T. Morris, American Chain Co., Bridgeport, Conn.

W. C. Hecker, Curtis Pneumatic Machinery Co., St. Louis, Mo.

C. F. Hodgson, Weaver Mfg. Co., Springfield, Ill.

E. V. Hennecke, Moto-Meter Co., New York City, N.Y.

Fourteen other directors are hold-over members of the board.

Let's Make the Store Sell this Winter

Your Store is Your Best Salesman! Is It Selling For You? You Can Make It Sell If It Is Neat—Clean—Interesting

By J. A. COMLY of Goodyear Tire & Rubber Co.

YOU, yourself, are on the auction block every day of the year. Your auctioneer is speechless—he can't speak, out loud, to sell **you** unless he is dressed up in his best and has his full assortment of weapons of force with him.

There are hundreds—yes, thousands—in fact hundreds of thousands of possible buyers and they'll buy **you** or the other fellow.

They're not anxious to buy, but from time to time they are forced to buy **someone.**

Are they buying the **same one** every time?
Has **your** Auctioneer done his best?
Has he all the weapons he requires?
Will you have to sell **yourself?**

Are you so conceited that you think you can sell yourself without the aid of an Auctioneer, either dressed fully—partially—or not at all? You'll get an awful bump in 1922 if you continue to harbor that idea.

You are, you, and you only—you are your store—you are the way that store looks inside and out—you are the way the windows are dressed—you are the courtesy—the service—the merchandise you offer.

All these facts are your Auctioneer. If you dress them—your Auctioneer—in the best way—the sale of **you** will be easier and more frequent.

How can you do that "dressing up?"

Let's start with you, yourself.

YOU ARE the proprietor of your establishment. Be the proprietor. Dress like one—be like one. By that, it is not meant that you should be dressed up ready for a ball room. A clean collar, neat suit, and clean hands appeal to motorists(ladies and gentlemen) far more than no collar or a dirty one, dirty, greasy overalls, and greasy hands.

As a proprietor you are naturally, or you should be, the Star Salesman in your establishment. Dress like a salesman—be a salesman—a salesman worthy of selling you, yourself, your place of business and your merchandise to the motorists.

No garage or vulcanizing business is so small that the proprietor cannot afford to employ experienced mechanics to perform the actual repair work. Your profit earning capacity as a proprietor or salesman—is or should be far greater than your earning capacity as a mechanic. Don't wait for business to come to you—salesmen don't do that—they go out and dig it up. You can dig up a lot of business—profitable business if you start—not after your competitor starts—but NOW.

This showroom says "Come In." It is often said that the dealer in the small city or town cannot afford a large salesroom. This attractive salesroom is owned by the Robson Motor Car Co., Guelph, Ont.

Your building need not be of marble to attract the customer to deal with you—the humble frame structure will accomplish the desired result, just as well, if—you keep it looking attractive.

An annual coat of paint gives a building a business-like appearance—it invites the Motorist inside.

Gaudy colors do not necessarily attract trade—often they drive trade to a place painted with colors in keeping with good business practice. Stores operating perpetual "fake" bargain sales often use gaudy colors—the public realizes that—you don't want to cheapen your place in the eyes of your regular and prospective customers.

The Salesroom

Cleanliness is the one big factor that insures a successful salesroom.

Clean show windows—always clean. While they are there to give extra light inside they are there for a more important reason—to see in the store and to show merchandise.

Remember—a show window is only a show window until it has an attractive display of your merchandise in it—then it is a salesman.

Clean show cases or silent salesmen—clean glass—no litter of papers on top—an attractive display—make them real salesmen. Do not use your silent salesmen for stocking purposes—a few articles well displayed produce better results than numerous articles just piled in.

Your stock shelves are only stock shelves so long as you just pile the merchandise on them. If you arrange the goods on them neatly so that, at least, one of everything can be seen by everyone who comes in, these stock shelves immediately become silent salesmen.

Having plainly printed price tickets on every article in your stock is very important. The price on an article helps your customers to decide to purchase the article. Price tickets are Assistant Salesmen—they half sell the article to the customer before you tell him about the article.

Then—price tickets indicate you have one price and one price only for each article. They eliminate "dickering" for a lower price—they tell the customer he is buying just as cheaply from you as your other customers buy from you.

Good departmental stores keep their stores clean inside and out—keep their windows and silent salesmen clean and well dressed—keep their merchandise attractively displayed on their shelves—have price tickets on all goods. They are successful—you seldom, if ever, hear of one failing.

You want your place of business to be an automobile departmental store—the assortment of automobile merchandise you stock justifies your calling it that—then why not "carry on" so it will be just as successful as the other kind of departmental stores? You can, if you will, follow their example regarding their methods of putting their merchandise before possible buyers.

"Service"

Service—lots of dealers associate that word with giving something—labor generally—away free. If you think service means that, you, too, are wrong.

Service is being courteous, keeping a stock of the most wanted merchandise on hand—suggesting ways to get the best results out of an article sold—suggesting the purchase of articles, to carry in the car, with which the motorist can make temporary repairs. Service is "asking 'em to buy."

Some manufacturers ask that certain free service be supplied with the sale of their products. Tire manufacturers ask that such service be given. By service, they mean that the dealer apply the tire free—that he tell the motorist how to avoid tire trouble or if he has encountered trouble, how to repair the damage. Very little labor is involved—it's mostly advice that is given—advice that is valuable to the motorist and invariably appreciated by him.

"Merchandise"

Lots of merchants—and you are an automobile supply merchant—think they should have the exclusive sale of an article. They are wrong in thinking that way—they'll lose by holding to that policy.

Invariably merchandise that is marketed on an exclusive agency basis is either not well known—is inferior in quality or has some hindering "string" attached to it that makes it unprofitable to sell. Automobiles themselves, are, of course, different in this respect.

Selective distribution of an article is the plan some manufacturers follow. Selective distribution means the selection of dealers who are equipped to render service on the article, who will carry an adequate stock of that article—who will exert personal sales effort to sell the article—who will sell at a uniform price—and who will link up their own advertising with that of the manufacturer.

A selective distribution plan eliminates the dealer who merely takes orders—who sells at any price except the proper price—who gives no service. In other words it drives the dealer out of business who has little or nothing invested in stock or equipment who tries to take the "cream" of the business away from the legitimate dealer. Invariably that type of dealer uses unfair business methods to accomplish his end.

CORRECTION RE GARY TRUCK

IN THE November issue of M. T. I. it was announced that the Gary Motor Truck Co., of Gary, Indiana, had established a branch in Toronto to manufacture trucks. This was an error. The Gary Motor Truck Corp. of Canada, Limited, is a separate organization and has no connection with the American Company. The Gary Motor Truck Corp., of Canada, have the exclusive manufacturing and merchandising rights for Gary Trucks and Chase and Beeman tractors for the British Empire. The company is fast getting under way for production in its extensive plant on Atlantic Avenue, Toronto. The Gary truck line includes 1, 1½, 2½, 3½ and 5 ton chassis, with an additional motor bus and farm special chassis.

YOU Can Make Service Advertising and Display Sell Cars and Tractors Right Now

Read How This Dealer Did It

This is the accessory arrangement that sells for F. W. Staples. Note the neat and open method of display and the use of dwarf shrubs for decorative purposes.

WHILE automotive dealers in all parts of the country this year have been talking about decreased sales, bad collections and general business depression, F. W. Staples, automobile and power farming dealer, of Ingersoll, Ont., has been busy recording the best year in his business history.

He didn't have time to notice what was going on around him. How could he? He had cars, automotive equipment, trucks and tractors to sell and he saw no good reason why he shouldn't try to sell them. He did try—not only tried, but he also sold.

In this year, when everybody was full of pessimism and turning blue at the gills, Staples sold many thousand dollars' worth of equipment, more than 80 new cars, 12 trucks, 14 tractors, 11 tractor plows, four sets of tractor discs, besides a large increase in repairs and many used car sales.

He also made a considerable addition to his premises and added to his equipment to take care of the increasing demand for service. **His 1921 business shows an increase of approximately 33 1-3 per cent. over that of 1920.**

How Staples accomplished all this in an admittedly hard selling year is here recorded:

"WHATEVER success we have achieved this year," said Mr. Staples, to M.T.I., "is due, I think, to three things, SELLING, ADVERTISING and SERVICE.

"By SELLING I mean approaching the prospect everywhere and asking him to buy.

"Through aggressive selling methods we have increased our automotive equipment sales this year by about 80 per cent. We have spent a great deal of time and study on this department and have achieved satisfactory returns for our efforts. **If automotive equipment is bought properly, if it is adequately displayed, if it is in charge of salesmen who know it thoroughly, and know how to merchandise, it it can be made one of the most profitable lines in the business.**

"There is only one way to sell cars, trucks and tractors, and that is by asking people to buy. We ask them everywhere. Our salesmen are out on the road all the time. This is absolutely necessary. We don't look for, or expect anybody to come and ask us if we will sell him a car, a tractor or a piece of equipment. Practically all our sales are made by convincing the prospect we have something to sell which he should buy. The prospect doesn't always realize his need for a car, a tractor or a piece of equipment, so it is up to the salesman to show him.

Helping Prospect to Finance

"It is necessary, frequently, to show a prospect how to finance such a purchase. Very often a man refuses to sign the dotted line because of the lack of ready cash. We consider it our job to help him in this matter and we have done so repeatedly with success.

"I should say right here that we keep in constant touch with our banker. We have an arrangement with him whereby farmers desiring to purchase a tractor and who have not the ready cash can procure a loan, after the banker has satisfied himself as to their standing. This is a very important link in our selling policy and has made many tractor sales possible which otherwise would not have been made. So far we have only been able to make this arrangement in connection with tractor sales.

Advertising and Sales Letters

"Our salesmen are supported by newspaper advertising and sales letters. We run advertisements in the local papers every week. These are changed frequently and are always arranged to suit the seasons. We don't try to advertise in one issue all the lines we handle; our practice has been to feature one line, believing that the message gets across much better that way. One issue will carry automobile and accessory advertising, another, tractor, another truck,—and so on. Our letters follow the same procedure. They, of course, carry a more personal message, and go somewhat more into details—without though, being too much burdened by details.

"In our letters we try to stress the service we can give—in fact they all hinge around service. WE SELL OUR SERVICE FIRST. **You can interest a man quicker by showing him what you can do for him than showing him what you can sell him. Once we have sold our service we have no difficulty in selling our goods."**

HOW STAPLES SELLS AUTOMOTIVE EQUIPMENT

1—Has stock departmentized.
2—Studies display and arrangement.
3—Sells at the pump.
4—Checks every car over that comes in to see what equipment it requires.
6—Solicits business personally and by letters.
7—Stands back of everything he sells.

Oldest Ford Dealer in Canada

F. W. Staples is a pioneer in the automobile business. He is the oldest Ford dealer in Canada, having sold his first Ford car fourteen years ago. Previous to that time he was selling bicycles and sporting goods. It was a natural and logical progression from bicycles to automobiles. All through his business career Staples shows a marked determination to keep up with the times. That is why he sold bicycles when they first came in and, why he left these to embrace the automobile. Likewise when tractors and trucks began to be used, Staples added them to his line. The same determination to move with the times, is noticeable when we take his new garage and equipment into consideration. Everything is there from the overhead track in the repair room to the adding machine and check protector in the office.

Accessory Department Is Strong Feature

One of the strongest features of Staples' business and one in which he is justly proud is the accessory, or more properly speaking, the automotive equipment department. This department is in charge of a salesman who knows everything by its first name. There isn't a part from an engine block to the smallest bolt which he can't lay his hand on in a second. And right here we have one of the secrets of Staples' success—his ability to select salesmen and service men who know their jobs.

Arrangement of Accessories

The arrangement and display of the accessories in Staples' garage would be hard to improve upon. Along the wall of the showroom, facing the entrance, in neat rows, is built a series of special bins. The bin compartments vary in size, and are arranged for the stock in the order most called for. Those articles which are not in constant demand are stored in the more out of the way compartments, though all are within easy reach. Each compartment bears a card, having the name, number and price of the article marked in clear, easily read type.

Small rear axle parts are in the boxes at the extreme right, and occupy ten rows from top to bottom of the main rack. In this section nothing but rear axle parts is placed—those that sell readily being nearest to hand. The next ten rows contain front axle parts arranged in the same manner. Next come engine parts, such as bearings, commutator shells, etc., occupying about the same space. Then follow transmission parts, such as fan blades, bushings and belts, starter parts, fender and running board parts, all arranged in separate divisions;

needle valves and inlet valves; top parts, such as straps, buckles, nuts, etc.; truck parts, spark plugs, tire accessories, and gaskets. That finishes the main accessory section.

Underneath these racks, and from them to the floor, are large bins where pistons, piston rings, brake shoes, connecting rods, radius rods, crank shafts, cam shafts, mufflers, and hose connections, are arranged in the order named here. The more unsightly things such as springs, drive shafts, axle shafts, steering rods, and pull rods, are arranged underneath the counter out of sight, but within easy reach. On the top of the accessory shelves are placed radiators, hood covers, housings and fenders.

There is a small gallery at one end of the show room where tires are displayed. This gallery is also used for storing tractor parts, engine blocks, crank cases, truck drive shafts, wheels, windshields and greases. A show case neatly dressed displays, lamps, lenses, flash lamps, radiator caps, motor-meters, mayal heaters, etc.

Staples carries a large stock of automotive equipment at all times. He believes in it as a money producer. While the stock is large, and includes everthing but the body, that goes to make a car—(Staples says he can supply all the parts to build a car at a moment's notice) it is carefully selected so that there is no dead material. It is bought to sell and the best sellers naturally bulk large.

Is Real Merchandiser

Staples is a real accessory merchandiser. He sells both to the consumer and the trade. His salesman are taught to sell and not merely to hand a man what he asks for. The practice of selling at the gasoline pump is a long standing one with him. **Every car is checked up to see what equipment it is in need of and an attempt is made to sell the missing parts.** EVERY PURCHASER OF A NEW CAR IS CONSIDERED A LIVE PROSPECT FOR CERTAIN EQUIPMENT SUCH AS SHOCK ABSORBERS, SPARE TIRES, BUMPERS, ETC., which are not included as equipment supplies by the manufacturer.

A very small percentage of Staples' new car customers are allowed to drift from his live prospect list. He keeps in close touch with them with a view to selling his repair service and automotive equipment. This is an important feature of his follow-up system.

Cars, trucks and tractors are sold entirely through personal contact with the prospect. That is to say while extensive advertising is employed both in the newspapers and by sales letters, the actual selling is usually accomplished by the salesman meeting the prospect in his home or out in the fields. The necessity for personal contact is never lost sight of. It is in Staples' opinion, the method above all methods, particularly at this time, to be adopted by salesmen who mean to sell their goods.

When asked by M.T.I. how he gets his prospects, Staples replied that he gets them everywhere. Picks them up sometimes in the most unexpected places. His salesmen make friends with all the blacksmiths in out of the way country places. The "Smithy" hears all the gossip of the country-side for miles around, and if any farmer is talking about a car or tractor he is likely to know about it. And what he knows he readily passes on to the salesman. The village grocer is also consulted with marked successes.

Staples believes in a prospect file, and keeping it in working shape. It is constantly referred to. The card he uses, was devised by himself. Whenever a prospect is located a card is made out, and from that time, until he is either sold or definitely abandoned, a complete history of him is kept.

One of the first things which strikes the visitor to Staples' garage is its neat, comfortable and inviting appearance. Everything is done to make it as inviting as possible. Plants are used to decorate the showroom with good effect. At night it is lighted in such a manner that it draws the eye. The passer-by can't help but look at it.

And when he does look he sees a handsomely dressed showroom.

For the comfort of customers there are toilets provided for both ladies and gentlemen. Provision is also made whereby customers can leave parcels, etc. when shopping in other parts of the town.

YOU Can Use a Prospect Card Like This

Date of Calls	RESULT OF CALLS	Advertising Mailed

Date Closed — Date Abandoned

Reason Abandoned

YOU Can Use Letters Like These This Winter

HAVE YOU lined up all your forces to go after winter service on cars and tractors? You can fill the lean winter months with good profitable business—but you must go after it. The business can be brought in, and the only way to bring it in is to SELL it, just the same as any commodity is sold. Sales letters will help you sell it.

The following letters are being used successfully by dealers this winter. They are actual letters. Read them and see if you can make them fit your particular business:

Dear Sir:

Winter weather is rapidly approaching and with it will come more or less trouble to you, unless you have anticipated a change in temperature.

We have found by experience that it is impossible to obtain economical and pleasing performance during the cold months without taking steps to provide a temperature under the hood which approximates summer heat. Unless this is done, severe depreciation of the motor will result. It must be remembered that anti-freeze simply prevents damage due to freezing and does not keep the motor warm while it is standing idle, which results in congealed oil and a stiff motor which increases the strain on the starting system and battery and increases depreciation. An investment in a good radiator and louvre covers will not only assure you the most satisfactory winter operation, but will also reduce repair bills.

The brakes should be properly adjusted, and in good repair to prevent skidding on a slippery pavement. You should have your battery inspected regularly, and also the breaker points and spark plugs cleaned. This will help starting. Be sure that the valves are seating properly. Leaky valves also make a car hard to start.

Unless your motor is operated properly, there is the possibility of excess raw gasoline failing to burn, and working its way into the oil base. You can avoid crankcase oil dilution by returning the choke to the normal operating position as soon as possible after the motor has started.

In this connection, it is well to inspect the condition of the cylinder oil at regular intervals, say every ten days or two weeks. This can be done by opening the pet cock and allowing a little to run out on to the floor or into a container and feeling the body of the oil with the thumb and finger. If the oil has become thinned out or feels dry and gritty, it should be renewed immediately, regardless of the mileage it has given. This will prevent rapid wear between the cylinder and pistons, and will eliminate the possibility of considerable future expense.

Let the motor warm up by idling until it will accelerate without popping back in the carburetor. It will warm up quicker when idling because the fuelizer automatically goes out at high speeds. Never race the motor to warm it up, this may score the cylinders.

Before you use any alcohol be sure that there are no leaks in the water circulating system. We are prepared to supply you with the proper mixture to be used, which insures you against injury from freezing or corrosion of the metal parts.

We will be pleased to go over your car and make any cold weather adjustments necessary and advise you more in detail regarding the proper precaution to be taken in your winter driving.

If it is your intention to lay up your car for the winter, we will be pleased upon your request to furnish you full instructions pertaining to winter storage.

Very truly yours,

Dear Sir:—

DON'T WAIT FOR A ZERO MORNING.

Do you know what will happen some nice cold morning? You will wake up and find your storage battery on the "fritz"—out of business—frozen, and very likely ruined.

And all because you did not have it inspected regularly.

No matter what make of battery you use, let us give it the "once over"—regularly—and keep it in good condition so it will answer the severe demand made on it through the Winter months.

This is good, sound advice. Our service is prompt our prices reasonable.

If you are laying up your car for the Winter bear in mind that in the Spring it may be practically worthless unless it has the necessary care. Let us give it this care by storing the battery for you.

The charge will be nominal and you will be money in pocket.

All makes of batteries receive equally good attention.

Yours very truly,

Dear Sir:—

At this time of the year, a good many owners are putting their cars and tractors away for the winter. Some need a general overhauling, others, minor repairs. Our facilities are unexcelled for taking care of your requirements. Our mechanics are experts, and our prices are right. The same courteous treatment extended to all.

Your Battery, the life of your car, needs particular attention. Our equipment for taking care of your battery is the best that can be procured. Batteries left with us for winter storage will have our undivided attention.

Our painting department will give your car a neat, natty appearance for Spring driving.

It will be to your advantage to see us. Our advisory department is open to you; write, 'phone or call.

A special invitation is extended to out-of-town motorists, to make our garage their headquarters while in town. Parcels left with us will have careful attention. Our waiting room is large, cheerful and warm. Ladies' and gents' washroom and lavatory in connection.

Yours very truly,

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You Can!---If You Think You Can

THE ABOVE saying is familiar to us all, but how many of us are inspired to greater effort by its truth. Elsewhere in this issue there is a story of an Ontario dealer who has this saying tacked high up on his business mast-head. At the beginning of 1921 instead of sinking back into himself and thinking that nobody wanted to buy cars or tractors, he redoubled his efforts. He improved his service, enlarged his garage, put out special advertisements and sales letters, re-arranged his accessory department and showroom and made them sell. His place is clean, attractive and well lighted, and it is selling for him.

Any dealer can do what he did. He has no secret or special twist, it is simply that he had the will to conquer.

The industry is apt to think at this time that business can't be done. It has been customary to accept the months of November, December and Janua as a period during which the automotive and power farming industries came to a standstill, or nearly so. But the dealers who have faith in their product, who have faith in themselves and who have got down to hard work and hard selling, have shown that business can be got at any time of the year.

Does Your Store Sell?

THE automobile or power farming dealer who means to sell this winter must put up a good front. His store must be attractive. Many shops are so cluttered up with junk for which there is no visible use, that it is a marvel how people ever get into them at all. If there is a use for this stuff would it not be better to clean it up and put it into stock labeled as having been used? If it cannot be so treated it should be scrapped and sold as scrap.

The importance of a neat and clean appearance can't be over emphasized. Every means to attract customers should be used and we know of no better way than to have a store that is clean and well lighted.

Let the Prospect Take the Wheel

TO GET the prospect to sign the dotted line is the ultimate aim of salesmanship. How often does it happen that after everything has been done, every argument used, and after, it would seem, the desire to possess has been created, the prospect still hesitates. All salesmen have experienced this and have to devise means of overcoming it—some final twist to bring the reaction in their favor. An Ontario dealer, who sells cars, trucks and tractors, has a system which he has used with success. It is simply to *get the prospect to take the wheel.* This dealer believes that one of the great reasons for hesitancy on the part of the prospect is the fear that he could never learn to drive a car or tractor. Once the prospect realizes that he has normal capacity along this line he soon comes to the point of purchasing. It is flattering to his pride to sit behind the wheel, to see the car spin along the road, or the tractor turn the furrow, and to realize that his is the guiding hand. Next time you have difficulty in getting that signature just *let him take the wheel and see what happens.*

The Outlook For Implements

SINCE the announcement of lower prices for farm implements, dealers in all parts of the country are looking forward to a substantial increase in business during 1922. We believe that is a perfectly logical deduction to make. The farmer is beginning to realize that other commodities are gradually coming to a price level more nearly approximating that of his own products, the psychological effect of which will tend to bring him again into the market as a buyer.

No one can foretell just what will happen during 1922, but it is a safe bet conditions will be greatly improved and the *hard-working, intelligent dealer will sell.*

"Caution" has been the farmer's watch-word for more than a year. He has been buying as little as possible—just enough to get along with, and sometimes not even that much. Many farmers are operating machinery which is being held together in a miraculous manner. The pendulum is about to commence the return swing where the farmer will start to buy in an ever-increasing quantity—*Will you be ready to meet the changed conditions?* The dealer who is alert in 1922, who works with his eyes open, and who systematically and assiduously pursues an intelligent selling policy will assuredly "win out."

Ontario Implement Dealers' Association Will Meet December 14

The Ontario Implement Dealers' Association will hold its annual meeting on December 14, at 2 o'clock, at the King Edward Hotel, Toronto.

As there are several important questions to come up for discussion the executive hopes there will be a large attendance of members.

Have a Used Car Policy

E. J. PARKER, sales manager of the Begg Motor Co., of Vancouver, B. C., says that up to date the used car has been the bugbear of the motor car industry. This is principally because of the lack of a definite policy, rigidly adhered to. The way some dealers handle used cars places this business in the category of a gamble. It can be made a real business, producing profits. The company already referred to regard the used car department as one requiring the closest attention. The basis of success they maintain is in the care with which examinations are made and the valuations set.

Another dealer regards this department so highly as a business that he has a daily inspection of used car stocks to detect leaky tires and weak batteries. A prospect on looking at a used car should see a car that looks as though it was worth the price named. It should be possible to demonstrate such a car as effectively as a new model.

The dealer cannot be too careful in overhauling the used car. Everything should be done to make it as attractive in appearance as possible. The used car owner is likely to be more touchy about the appearance and performance of the automobile than the new car owner. The new car owner takes appearance and performance, of course, for granted, because they are obvious. The used car prospect feels he has to purchase something that will do him credit in the eyes of his family and neighbors. The dealer who sells him a car that will appeal to himself and his friends, at one stroke has added a valuable asset to his business—the respect of his customers and his customer's friends.

Let's get down to a policy that will make the used car one of the most profitable departments of the business. Let's take the gamble out of it, and dignify it with a policy which shall be rigidly adhered to. Let's do it now.

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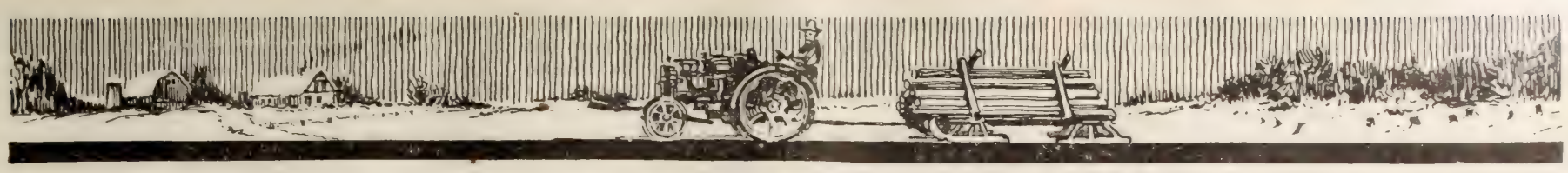
The Business Paper Gets At the Facts

A STRIKING illustration of the service the technical or trade paper renders its readers and of the difference in the reliability of the information it supplies and that furnished by the average daily newspaper is afforded by an article in a recent issue of the "Railway Age Gazette," with reference to Henry Ford of automobile fame and railway management.

Mr. Ford, as many of our readers will have learned from the newspapers, recently purchased the Detroit, Toledo and Ironton Railway, a small road which was practically in a state of bankruptcy. In the same papers they will also have read how Mr. Ford put in his management in March, and in April the net operating income has risen from $78,000 to $276,000. For several months past the various newspapers, magazines and labor publications of the States have been jumping at conclusions and drawing deductions from this one month's figures, enlarging upon the fact that, in spite of higher wages, Mr. Ford had succeeded in making his railway a paying proposition, and in many cases it was hinted that here was the man who could straighten out the railway systems of the country and place them upon a stable and profitable basis.

The "Railway Age Gazette," however, was not content to accept these hastily drawn conclusions as decisive and started an investigation on its own account, with the result that when the figures for several months of Mr. Ford's regime were examined a very different tale was unfolded. The income of $276,000 in April had dropped to $187,000 in July and in August to $70,000, lower than it was when Mr. Ford took the road over. Expenses, moreover, had increased from 52.7 per cent. to 59.7 per cent. in July and 71.8 per cent. in August—this in spite of the fact that gross earnings which were $713,000 in June had increased to $744,000 in July and still further to $763,000 in August. Moreover, while the operating expenses had thus increased 46 per cent., those of the ordinary railways of the country had increased only one per cent.

The point in this incident which immediately concerns our readers and ourselves is not so much the success or failure of a railroad as that to a business paper is due to the fact of the truth being known. During the last few years occurrences of this nature have been frequent in connection with the series of trade and technical publications of which this paper is one. Inaccurate and misleading information giving rise to serious complaints has been published on one subject or another by the daily papers. The public have been worked up to a pitch of indignation by some statement which upon investigation has been found to have no foundation, and it has been left to the business paper to show that the complaint was therefore groundless. It is the reliability and accuracy of all information published that differentiates the business paper from the ordinary newspaper and makes it of such high value to its readers.



You Can Put "Win" Into Winter By Selling Tractor Economy

By R. S. WILLIAMS

YOU have never heard of anyone learning to melt snow into rare vintage wine or to make cherries bloom and ripen out of doors during the Canadian winter. Nevertheless, the snow and ice of this winter can be turned into something more profitable to you than wine and cherries. It is a period that can be devoted to sales efforts that will return much value to you if your efforts are wisely directed. It is a season when you really have more time for constructive planning than is possible during the so-called selling seasons of spring and autumn.

Give the Stove a Chance

There is a great temptation to sit close to the base burner, tell stories, and make more or less accurate expectorations at the coal bucket while the wind whistles around the corners and the snow lies deep along the road. The temptation is strong and will continue strong so long as human nature is as it is, but the cold logical facts remain that such tactics do not tend to build up business.

Who Started It Anyway?

It is a popular superstition of long standing that tractors cannot be sold in winter. The purchase of a tractor represents considerable outlay in money, and because it is primarily a crop producer, the average farmer expects to wait until the fields are ready to work before investing. The average dealer acquiesces in this point of view and sits close to the stove until the truant sun returns and dissipates the blasts of winter with his cheerful beams. Why should we wait? Why not sell tractors in winter? Why defer to a popular delusion that there is no benefit to be derived from a tractor purchased during cold weather? Let us shake off our lethargy and try to stir up a little tractor business this winter. It will take thought and work and enthusiasm but the results will justify the effort.

The Truth of the Matter

In the first place tractors can and are being used in winter. They are being used to break the trail on the drifted country roads. A snow plow can be purchased or homemade to fit any standard tractor. With ice lugs on the drive wheels it can be bucked through the drifted cuts and thus break a clean trail for the vehicular traffic. The tractor can be used to put up ice—pulling the loaded wagons or pulling the ice into the ice house. For hauling grain and hay to town the tractor can be hitched to two or three wagons and will make the trip over the rough, frozen roads safer and cheaper than horses.

Brush lands can be cleared in winter, logs hauled, and lumber transported.

Then there is the belt work that the winter months afford. Hay and straw can be baled at the rate of ten to twenty tons a day. The tractor will shell corn, pump water, crush stone, and grind feed. Belt work is a job that never has been taken full advantage of by tractor owners in Canada. The husker and shredder, the circular saw, and the concrete mixer all call for power and represent work that can be done in winter without slighting the important tasks incident to crop production. There is no reason for laying up the tractor in winter. It can be used almost every day at some productive work. The average farm horse works 1-2/10 hours per day during winter. That is because the horse is good only for drawbar work—but a tractor delivers power to the belt also and winter is a great time for belt work.

Another Important Reason

There is still another reason for buying a tractor in the winter. The owner can take his time about learning it thoroughly. It is well known to tractor manufacturers that the major portion of the troubles arising among the tractor owners are due to ignorance of simple mechanical details. When a farmer buys a tractor the day before he expects to plow, he allows himself no time to become acquainted with a complicated power unit that will soon show the effects of ill tretament. But when the farmer buys in winter, he can take all the time he needs to learn his tractor from top to bottom. Before the spring rush is upon him he is an experienced tractor operator and he is not going to mistreat his tractor through ignorance of what he is doing.

Tractors Can Be Sold Right Now!

1. **To Clear Brush Land, Haul Logs and Lumber.**
2. **To Do All-Winter Belt Work.**
3. **To Break the Trail on Drifted Country Roads.**
4. **For Road Construction and Maintenance Work.**
5. **For General Industrial Work.**

What the Tractor Schools Prove

The full attendance at the various tractor schools held every year by numerous tractor manufacturers proves that farmers need and welcome expert knowledge of the fundamental principles of construction and operation of their tractors. If the tractor owner can take a couple of months to play with his tractor, figuratively speaking, before it is actually needed at crop-producing work, he will get better service from the tractor when it is actually put into hard work.

These arguments are real—not theoretical. There is not a farmer anywhere who will not get the logic of every one of them—if he knows. Who is going to tell him if the dealer does not?

Make up a list of possible tractor prospects in your territory. There should be fifty who will bear working.

Start Your Campaign To-day

Put every name on an individual card because in that way you can incorporate more complete information. Work the names yourself with the assistance of the manufacturer of your line.

Send a copy of your prospect list to the tractor manufacturer with a request that the names be circularized with letters and advertising matter on tractors. This must be done in your name and your name must appear as the local representative on each piece of advertising matter sent out. Any tractor manufacturer will be glad to help a live dealer.

Write a general sales letter to every prospect on your list. Something like the following might be in order—or it could be changed as individual conditions and requirements dictate.

Dear Sir:

Suppose you bought a tractor this month instead of waiting until Spring. What would it profit you?

In the first place, every minute of work you got out of it would be almost clear gain because it would be work that otherwise might not be done. Come to think about it, there a great many jobs that can be done by a tractor in the winter time.

Clearing brush land, hauling logs, hauling ice, breaking trails through the snowdrifts, and hauling grain and hay to town.

Then there is the belt work. Every farmer needs ground feed and a tractor would supply steady power for a feed grinder. Running a wood saw, hay baler, husker and shredder, corn sheller, stone crusher and other power machinery takes power, and unless you have the power you must hire a custom rig.

Then there is the belt work. Every farmer needs ground feed and a tractor would supply steady power for a feed grinder. Running a wood saw, hay baler, husker and shredder, corn sheller, stone crusher and other power machinery takes power, and unesss you have the power you must hire a custom rig.

As a matter of fact, a tractor can be kept busy almost every working day in winter, as well as in summer, and unlike your horses, it is costing nothing for upkeep while standing idle.

Do you know that the average farm horse works but 1.2 hours per day in winter—that is because horses are good only on drawbar work. But these same horses must be fed, watered and cared for daily regardless of the work they do.

The tractor which costs nothing while idle can be worked more hours during the winter on the average farm than the horses.

Then, aside from the question of work to be done, think what a good schooling you could get by taking a tractor out home right now and studying it thoroughly while you have the time. If you wait until Spring work is actually upon you before investigating, you will do both the tractor and yourself an injustice by using it at hard work before you are really familiar with it. If you had it this winter, you could become a thoroughly experienced tractor operator by the time the land is ready to plow. It is worth thinking about.

Step in the next time you are down and let us show you the tractor itself and quote you our attractive terms.

Yours very truly,

By your own effort and assisted by your manufacturer you should send from four to six different pieces of mail matter to each name on your list dur-

—From Motor World

ing a period of thirty days. Keep track of the mailing done so you will know what each man has received.

Advertising alone will not sell tractors in very many instances. It will, however, arouse an interest which can be turned into cash if you will follow it up at the proper time.

By referring to your prospect file cards you can tell which farmers are the most likely prospects and they should be called on personally after about three or four mailings. Call at the prospect's home or get him into your store. If you have a sample tractor on the floor lead him up to it and give him the strong points of its construction, but don't forget that your biggest obstacle is to overcome the prejudice against buying in winter. Your task is to show him that a tractor can be used in winter the same as an automobile. Suitable terms can be arranged so that he will not feel that he is tying up too much money at a non-productive time. Above all keep after him. Don't be discouraged if at the first interview he should say "No" emphatically. Remember that it takes a lot of salt and hot water and patience to thaw out a frozen pump on a cold winter morning. The prospect's mentality is frozen solid and you must thaw it out gradually with patient argument and persistent effort. Sales don't come as easily in winter as in summer, but they are even more profitable when they do come because they represent business during a dull time.

A Word About The Sample Room

Don't labor under the misapprehension that a farmer does not appreciate good looking samples and a clean, warm, comfortable place to sit down. Remember that when the farmer and his wife come to town they must rely upon the hospitality of the grocery store, the livery stable, the bank and the implement dealer. There is no other place to go. Now why not make things so pleasant and clean that not only the farmer but his good wife will feel comfortable and at home in your sample room. Have a clean office, with plenty of chairs. Clean out the trash, wash the windows or cut a few new ones. Provide a real cuspidor instead of making the coal bucket do double duty, and if possible have a small enclosure set aside exclusively for the women. You may not realize it, but the woman's influence has much to do with the final decision to make a large expenditure. Get her on your side by extending the courtesy of a clean place to sit down and you have done much toward getting the edge in making a big sale to her husband. It is "old stuff," but it never fails to work and a visit to a few representative dealer's stores will convince the most optimistic that there is a world of opportunity for improvement.

Clean Samples Make A Hit

Have your sample machines clean and in good working order. Shine up your sample tractor every day and make it look the money. Place literature and catalogs in a convenient rack where the farmers can help themselves—and help sell themselves. Keep the literature fresh and clean and renew it often.

These are little things. They take a small amount of time and very little expense but they go a long way toward paving the way to bigger business.

Putting "Win" Into Winter

In the words of a successful implement dealer, "Get your feet down off the stove and put a little punch into some real winter selling effort and the old bogie that tractors cannot be sold in winter will dissipate itself like snow on a hot stove."

What You Can Sell the Farmer This Winter

THERE is a big opportunity for the wide-awake power farming dealer to put on an intensive campaign this winter selling small engines, feed grinders, cutting boxes, buzz-saws, pump jacks, etc. These are particularly useful to the farmer during the winter months and for that reason should figure largely in the dealer's selling efforts at this time.

Hundreds of farmers this winter will cut their own wood, and many will make money utilizing power-driven wood-saw outfits cutting for their neighbors and for market purposes. Wood can be cut up both for fuel and for lumber and there is a ready market for both. A day's work with a buzz saw or dray saw will yield as much firewood as could be cut in many a hard day's energetic work by hand.

A great many farmers in good territory already have gasoline engines that can furnish the power to operate a wood-carving outfit. These outfits are comparatively inexpensive. Where the engine also is to be purchased it may be a good idea to suggest that one or two farmers join in purchasing the complete outfit. In this way many sales might be made which otherwise would be impossible.

An engine of six to eight horsepower is sufficient for the heaviest wood, and one of four horsepower will suffice in many cases.

Farmers who have tractors may plan to use them to furnish most of the power for belt operations, but there are a number of jobs on the farm where it is impractical to use tractors for that purpose. Some tasks are so located that it is not handy to hook them up to a tractor to say nothing of the expensive power that would be wasted.

Feed Grinders

Feed grinders will also be used extensively this winter, particularly since there was an especially large corn crop. Ground ear corn is an excellent food for the dairy cow, for the beef steer and the hog. The cobs unless ground are never eaten, yet the meal from the cob is porous and valuable and removes the tendency for the feed to lie heavy in the animal's stomach. The use of a feed grinder is worth all it costs to the farmer. Driven by a gasoline engine or a tractor it is operated most efficiently and economically.

Every farmer who feeds live stock is a prospect for a grinder. The advantages of a grinder are so apparent when properly explained by the dealer that there should not be much sales resistance.

The dealer should make himself thoroughly acquainted with the principles of stock feeding and be able to talk to the farmer intelligently about it and show him how he can reduce costs by proper equipment.

One authority says that grinders will handle four to five bushels of corn, or two to three bushels of oats, to the horse for each horsepower employed.

Pump Jack

Pumping water is one of the hardest and at the same time one of the most persistent jobs on the farm. Water is required every day and at all times and if it has all to be done by hand it is a back-breaking task. In spite of the hardness of this task there is a large percentage of farmers in every district still pumping water by hand. They will pump it by hand all through this winter if someone doesn't sell them an up-to-date power outfit.

Selling Campaign

In preparing his selling campaign, the dealer should take every advantage of the trade literature. He should place it in his store so that customers can see it, in neat piles, or, better still, in a special rack. This literature should also be sent out to prospects. To get the best possible advantage from it, it should be sent out on a plan. Only live prospects should get it—prospects whom the dealer knows are in need of the machinery he has to sell and who are in a reasonable position to pay for them.

Advertising in the local papers and direct by mail advertising will also help. Letters should only be sent to live prospects and they should deal specifically with the particular machine you want to sell A general letter won't do. Individual letters to your hottest prospects will be found of great usefulness.

Advertising and letters will not be sufficient in most cases; personal solicitation must follow.

Your sales this winter will depend on the effort you put forth. You and your salesmen should plan to call on every prospect on your list as frequently as possible.

Engines, grinders, buzz-saws, pump-jacks, etc., are real winter necessities and should be pushed to the limit by the dealer. Start to sell now.

Free Tractor Service——— "There Ain't no Such Animal"

SOMETHING for nothing?—It can't be done. Whether it applies to making your everlasting fortune in oil or mining stocks, or in free tractor service, it is like the blind man said about the giraffe, "there ain't no such animal," says Fergus Oliver, assastant manager of Service Tractor Division of the Allis Chalmers Manufacturing Company.

You may say you know a dealer from whom you bought a tractor and who always is ready to give free service any time he is asked for it. It may be that he has serviced your tractor a number of times and not charged for it; but don't think you have gotten something for nothing, for you haven't. The actual work which he did may not have been charged for, and in consequence you feel you are ahead of the game, but you are not.

You have been allowing your dealer to do all of your little and large repairs, and in consequence you have never paid much attention to how the work was done. You have lost the knowledge which you should have gained, as this dealer may some day go out of business or be replaced by a dealer who will not be so generous. What will you be then? You will soon find out that you have let yourself get to a place where it is impossible for you to run your tractor without the help of some other person who really knows how. It may be a dear and a sad lesson, for there is where you will begin to pay for the so-colled free silver which your former dealer gave you. Think it over and see if we are right.

If the work that you require on your tractor is worth doing it is worth paying for. If you know that every time you send for the dealer or his service man it is going to cost you anywhere from $5 to $20 you will begin to take an active interest in keeping your tractor in the best running condition and you will see to it that you call for the service man as seldom as possible.

We have known of cases where a farmer would call up the dealer and tell him that he must send out his service man at once as his tractor would not start. When the service man gets to the farm he will spin the motor and away it will go. What has been the trouble? Some such little thing as the gas line clogged so that no fuel was getting to the carburetor. We knew of one case where a farmer left his tractor in the field and it was rained on during the night. When he attempted to start it in the morning it would not go. He called the dealer, who, by the way, had to drive twenty miles to the farm. All the time the dealer was on the road the sun was shining and by the time he had covered the twenty miles the sun had a chance to dry the magneto. When he got there and cranked the tractor, away it went without a bit of trouble. Who was to blame? If he had known that his dealer was going to charge him at the rate of $1.00 an hour from the time he left his place of business until he got back, don't you believe he would have spent some little time trying to find out what was the matter with the machine, and if he had, wouldn't he have found his trouble? Sure he would. Get tractor-wise. Free service is sometimes mighty expensive—there ain't no such animal.

The New Cletrac Model "F"

THE Cletrac Model "F," which is the name of the new tractor announced recently by the Cleveland Tractor Company presents many new features of development

At first glance the simplicity of the new tractor is apparent. There is no main frame, the motor, transmission and differential assemblies being so designed that they bolt together into one solid unit from front to rear, eliminating vibration and insuring rigidity and alignment of the power path at all times. Compactness too, results from this simplified design and contributes its share to the reduction of size, weight and price without the sacrifice of power and serviceability which farm use demands.

Oil and grease cups have been eliminated, leaving the filler pipe to the combined motor and gear case as the only point requiring attention from the operator. The oil in this case supplies lubrication to every part of the tractor which requires it. This simplifies the problem of proper lubrication.

The motor, which has four cylinders of 3¼-inch bore and 4½-inch stroke, is provided with four crank shaft bearings in place of the usual three. This eliminates motor vibration that wears on the motor, and in fact on the whole tractor. The gear case cover on the front, which also acts as a supporting member for the power and driving units, encloses the gears for the water pump, fan, governor and magneto giving a simple self-contained motor that requires little attention from the operator. Positive gear drive to fan and water pump is an important feature.

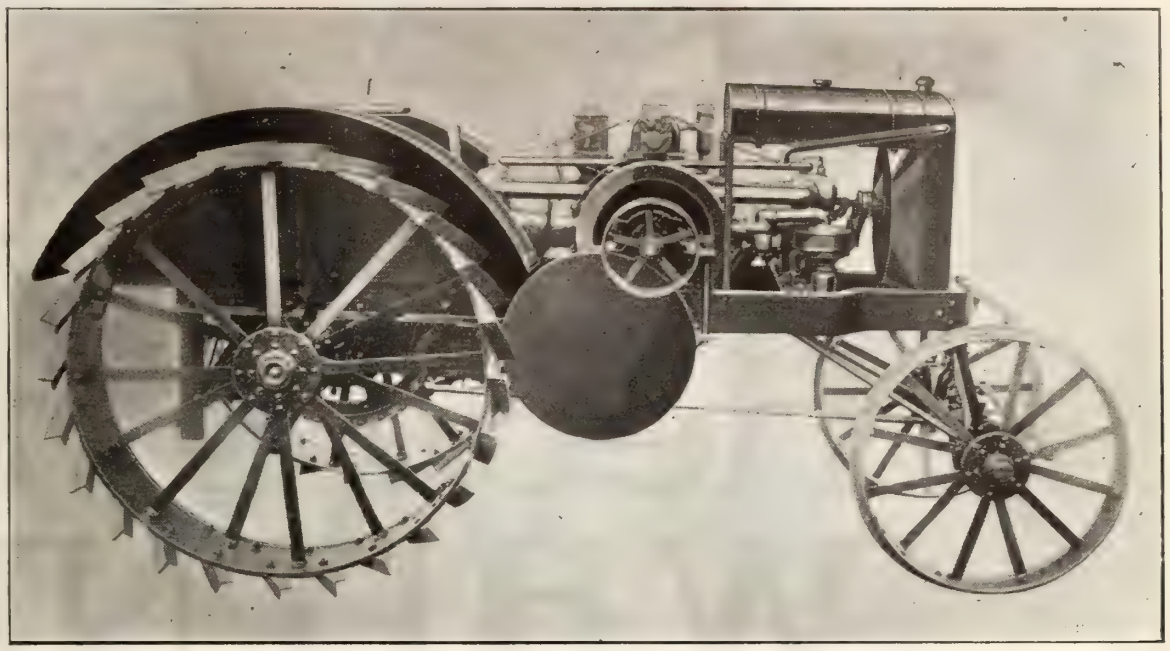
There is one speed forward and one reverse, the shifting being accomplished by meshing a heavy straight tooth pinion inside of one or the other of two bevel gears which are so set that they are turned in opposite direction from the bevel drive pinion on the clutch shaft. The usual train of transmission gears has been entirely eliminated.

As in the Model "W" Cletrac, steering is accomplished by varying the ratio of speed between the tracks but in place of gears and screws to tighten the steering bands a positive cam roller action is used, greatly simplifying the entire mechanism. A new type of brake control utilizes both steering bands and makes unnecessary the addition of a third band and drum for braking. Adjustments for wear are made with conveniently located screws reached through hand holes without removing the rear housing cover.

Tank-type design in its most modern form is found in the new Cletrac. The driving sprocket is located well up from the ground so that it is free from mud, grit or sand and the method of assembling upon full floating drive shafts running in double sets of angular ball bearings eliminates any necessity for adjustment. There are no other wheels.

Track shoes are cold formed from hardened chrome steel and so designed that they present a continuous solid tractive surface that keeps out mud and dirt. They are joined with hardened pins and driven by hardened roller collars which mesh with the drive sprockets. There is one continuous cross grouter on each shoe to insure positive traction and prevent slippage.

The method of supporting the tracks is also unique embodying the principle of the ball bearing with its resultant reduction in rolling friction. The side frames which are built up of heavy steel sheets welded and riveted into one solid piece, are provided with a hardened chrome steel channel throughout their entire length in which a roller chain runs freely.



The Whitney Model "B"

Whitney Model "B" Tractor

THE Whitney Tractor Company, Cleveland, Ohio, have made preparation to extend the field of demand for the Whitney Model "B" Tractor to Canada.

In general classification, the Whitney belongs in the two-plow tractor class, carrying weight, power, specifications and capacity which enables it to handle two plows through a variety of conditions. The tractor is conservatively rated at 9 h.p. at the drawbar and 18 h.p. at the belt, at which rating it is able to deliver its full power without overload or labor. Dimensions are—length 123", width 56", height 58". Shipping weight 3,000 pounds. Loaded for the field it will run about 3,225.

The motor is of the double cylinder opposed type with bore of 5½ inches and stroke of 6½ inches, operating at a normal speed of 750 R.P.M. The motor is equipped with a built-in fly ball governor with a quick adjustment which makes it possible to operate the motor under governor control at any speed from 400 to 800 R.P.M. The crank shaft, connecting rods, cam shaft and gears are all made from drop forgings of ample size. The cylinders are of the L head type, designed for simplicity. This design eliminates the rocker arm in the valve operating mechanism and, therefore, reduces to the minimum the possibility of wear and consequent incorrect valve timing. The valves are accessible for grinding by simply removing a port cover. The connecting rod bearings are accessible for adjustment by removing the cam shaft case from the crank case. The cam shaft case is held in position by six cap screws which can be removed in a few minutes time leaving the connecting rods accessible from the top.

The lubrication is positive from a Madison-Kipp force feed lubricator which supplies fresh oil to all the bearings all the time.

A gear-driven high-tension magneto with impulse starter provides for the ignition and affords easy starting in adverse temperature conditions. The manufacturers claim to have uncovered some true developments in kerosene burning thru special design in the manifold, proper heat control and correct compression and ignition conditions.

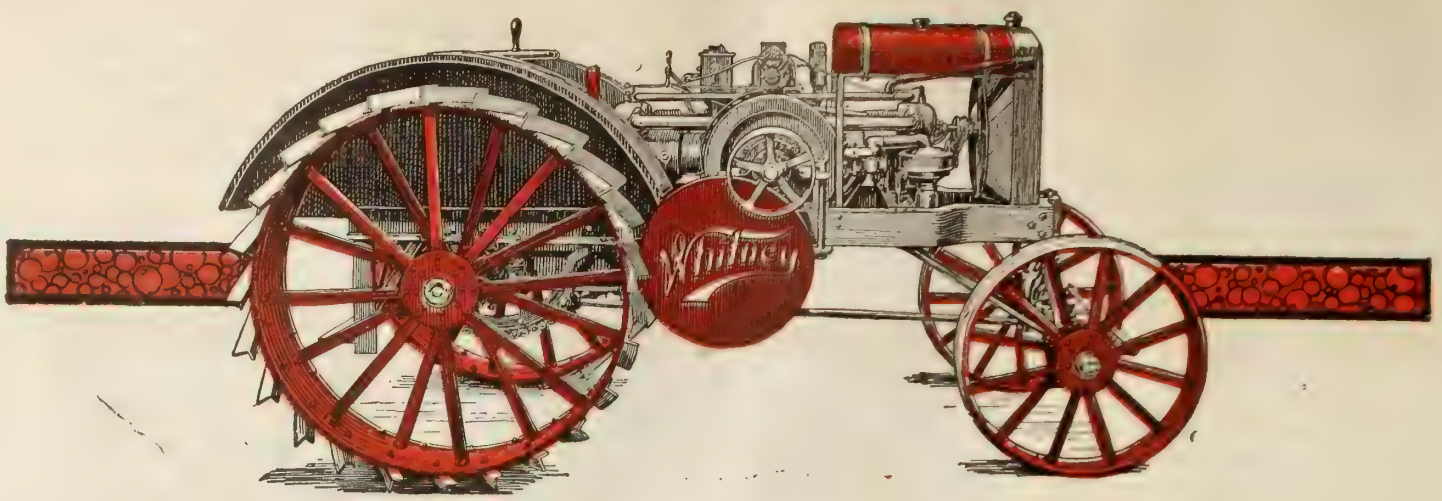
The transmission or gear set carries three forward speeds of 1¾, 2½ and 4 miles per hour and reverse of 2 miles per hour. All these speeds are calculated with the motor operating at 750 revolutions per minute. The transmission case is grease tight and dust proof on account of the enclosed construction. The gears are all high carbon steel, drop forged, heat treated and hardened. The shafts are likewise of high carbon steel and mounted throughout on Timken roller bearings.

The final drive from the transmission case to the rear axle is through a single roller chain operating over large size driving and driven sprockets. A feature in the Model "B" is the distribution of weight. It carries just exactly the correct relative weight on the front and rear wheels to prevent the machine from lifting off the ground at the front end when in difficult conditions or overload.

The rear wheels are 48" in diameter with 10" face, regularly equipped with two-inch angle iron lugs projecting five inches over the rim.

The drawbar is designed so that it will take any of the regular tractor tillage tools now on the market. These special tools are exactly the right size, design and hitch, to work with the Whitney and turn out the most perfect work.

The new Cletrac.



Here's the WHITNEY

THE Whitney Tractor Company, manufacturers of 16 years' standing in the tractor industry—announce a new unparalleled price on the Whitney Tractor—***$595 COMPLETE—NO EXTRAS TO BUY!***

Brief Specifications

Power—9 H.P. on drawbar; 18 H.P. on belt.

Dimensions—Length, 123″; width, 56″; height, 58″.

Weight—Domestic shipping, 3,000 lbs.; boxed for export, 3,900 lbs.

Transmission—Selective, 3 forward —1¾, 2½ and 4 miles per hour. Reverse 2 M.P.H. All gears forged steel cut and hardened running in oil.

Motor—2 Cylinder opposed type 5½″ bore, 6½″ stroke, 750 rev. per minute.

Governor—Whitney special fly ball type, enclosed, gear driven.

Pulley—Direct driven from crankshaft, size 11″ dia. by 6¾″ face, clutch controlled, pulley, regular equipment.

Fenders—Pressed steel over rear wheels. Regular equipment.

The Whitney is a sturdy, time-tested, field-proven two-plow tractor with the traction, strength and reserve power found in the best of the 2-plow jobs built. Number of plows recommended for use with Whitney, two 14-inch; size thresher recommended, 22″x34″. The Whitney has not been "rated up." Instead it has been under-rated.

The price, made possible only through huge production, without a doubt ***shatters all former standards of tractor value.*** It marks a new epoch in the tractor industry. It brings the price of this sturdy, field-proven machine down to a level squarely in line with to-day's price of farm products—to a place where ***practically every farmer in the country can afford to buy.***

Only through big-scale, close-margin production has it been able to produce this proven tractor at such an astoundingly low price. The resources of a $5,000,000 company have been thrown into the manufacture of this one model. The result is a real utility tractor, a standard, two-plow job—long-lived, dependable, time-tested—at a price no higher than the cost of a good team of horses.

Whitney

$595

Complete—
no extras to buy

-and Here's the Price

WHITNEY has, without a doubt, accomplished the biggest single thing achieved in the history of the tractor industry—produced a thoroughly proven, medium-size, reliable tractor at a price so low that it is easily within the means of every farmer in the country.

Do you realize the tremendous possibilities that lie in the sale of such a tractor? ***Every last farmer in your territory is a prospect.*** You will be selling no new unheard-of model, but a well-known, thoroughly proven machine at a price no other tractor can touch—***and at a greater profit to you than practically any other tractor on the market to-day.***

The attached coupon will bring you the complete details of our dealer's proposition—the biggest profit opportunity ever offered in any tractor line. Write or wire to-day.

The
Whitney Tractor Co.
2707 Prospect Ave. **Cleveland, O.**

THE WHITNEY TRACTOR CO.
2707 Prospect Ave., Cleveland, Ohio

Gentlemen:
Please send me complete information on your dealer's proposition.

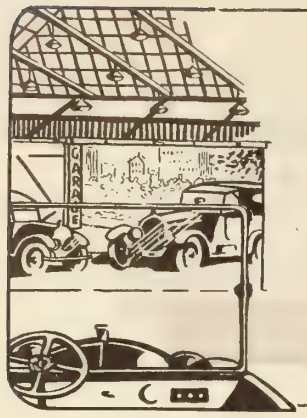
Name .....

Street .....

Town .....

State .....

Whitney



SHOP NOTES FOR THE GARAGE MAN

Is Your Repair Department Equal to Any Emergency?

This Tells of a Dealer Who Had Occasion to Apply a Radius Rod to a "Hotchkiss" Drive. He Explains His Methods in Detail. It's Worth Saving for Future Reference

THE successful garage man is the one who can adapt himself to any emergency. Suppose for instance you were called upon to apply a radius rod to a "Hotchkiss" drive, how would you go about it? A reader who had occasion to make such a repair comments as follows:—

In applying a radius rod to a "Hotchkiss" drive truck it is first of all necessary to put a shackle between the front end of the spring and the spring bracket the same as the one already at the rear end in order to allow the frame free movement in relation to the spring within the limits imposed by the action of the radius rod. If this is not done, the axle, as it moves up and down in relation to the frame in going over bumpy roads, or under load, will be trying to move about two centres at the same time, namely, the centre of the spring front pin and the centre of the radius rod front pin.

If arcs of circles (see Fig. 1) are struck from these two points as centres and radii equal to their distances from the centre of the axle it will be noted that these two arcs cross one another. The straightening of the spring as the axle moves upwards further increases the angle at which the arcs cross. It will be plainly seen that a heavy strain is put on both the radius rod and the spring, to say nothing of the parts to which they are connected, by this movement, which will very likely result in a break in one of these parts sooner or later. Also, the bracket for the radius rod is attached to the frame very close to the point of maximum frame stress so that holes drilled there, which have not been provided for in the original design, are apt to cause trouble from this excessive strain.

In either the radius rod, or the "Hotchkiss" drive, in order to have the brakes work properly, the arc described by the axle in its movement in relation to the frame must be concentric with the arc described by the ends of the brake levers about the ends of the equalizer levers. See Fig. 2. If the latter are already located and are not to be changed, this will settle definitely the proper location of the front end of the radius rod and consequently its length.

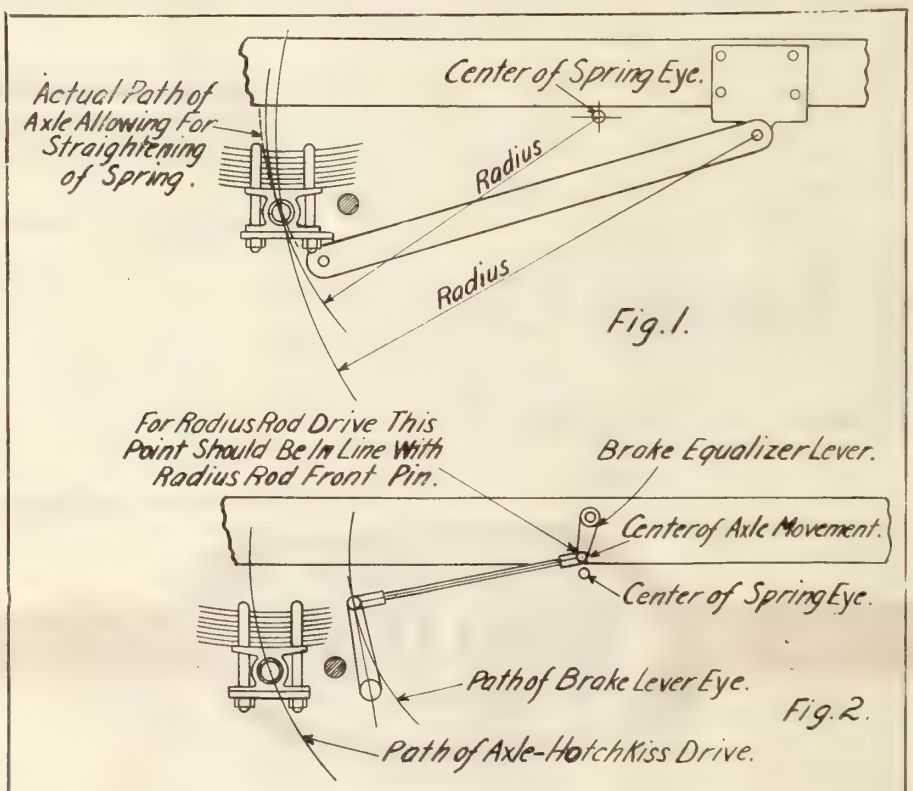
Sometimes a cause of brake trouble in "Hotchkiss" drive trucks is poor connection between the spring and the axle. In fact I think this is the cause in ninety-nine cases out of one hundred. Clips alone are useless. There must be some positive anchorage that will prevent any movement whatever of the spring on the axle, forward or backward, under any strain within the pushing or pulling power of the spring.

Another repair man faced with the same job effected the repair in the following manner:

Our rods were made out of 1½-inch pipe. This is about 2 inches outside diameter. Pieces of steel were turned to drive in these pipes at each end and were secured further by cross rivets. These steel pieces had projections that were shaped up into rod and eye ends which were in turn joined to the fixed chassis members by means of pins. On this particular truck, the best way to fasten at the axle was to make longer spring clips and bolt steel angles to the under side of the axle housing. Cast iron saddles were used at the forward end and these were riveted to the frame channels in the customary manner. Plain pin joints were employed; a better job would have been ball-and-socket joints, but the extra expense was not warranted.

As the truck was of the shaft drive type, no adjustment for length was needed, as it would have been if the drive had been by chain. In doing such a job, it is best to have the rods short —the longer they are, the less do they follow the movement of the spring up and down and slightly backwards as the load settles the spring.

If any of our readers have any comments to make on these two operations, or if there is any other unique repair they have been called upon to make in their experience, we would be glad to hear about it.


Actual Path of Axle Allowing For Straightening of Spring.
Center of Spring Eye.
Radius
Radius
Fig. 1.
For Radius Rod Drive This Point Should Be In Line With Radius Rod Front Pin.
Brake Equalizer Lever.
Center of Axle Movement.
Center of Spring Eye.
Path of Brake Lever Eye.
Fig. 2.
Path of Axle-Hotchkiss Drive.

This Shows How a Radius Rod Was Applied to a Hotchkiss Drive.

The Use and Care of Tools in The Garage

How To Use A Hack Saw

THE one thing that makes for good cutting is the choice of a hack-saw blade of the proper kind for the work. For cutting cold-rolled, solid stock, machine and light structural steels, 14 teeth to the inch is recommended, and 18 teeth to the inch for general all around work. For sheet metal and pipe over 18 gauge, 24 teeth to the inch should be used. The 32 teeth to the inch blade is adapted to either thin sheet metal or tubing under 18 gauge in thickness. It is safe to say that the 18 teeth to the inch blade is the desirable one for all general processes. The best results are obtained from 50 to 60 strokes a minute, pressing heavily on the forward stroke and lightly on the return. Don't start a new saw in an old cut, because the set is wider on the new saw and the blade will stick.

How to Use a Glass-Cutter

Dip the wheel in kerosene or turpentine. Place the cutter between the first and second fingers. Start the wheel on far side of sheet of glass from you, 1-8 inch from the far edge. Hold cutter erect as the wheel will revolve easily and will make a straight, even stroke. Press hard enough to make a fine hair-line on the glass. If you press too hard, the glass will flake; this is wrong. Draw the wheel entirely across the glass (allowing your cutting wheel to drop off the pane). To break the glass, hold the pane firmly between the first finger and thumb, with both hands (side nearest to you) then give the glass a slight bend and it will break the entire length.

How to Use Tinners' Snips

Always make straight up and down cuts. When cutting, never twist the snip sidewise as this practice would have a tendency to dull the cutting blades. Never use blades for prying or bending and don't use for heavier work than usually intended for their size. The joint and cutting edges should be kept well oiled. Another point to remember is never to use the cutting edges for wire cutters.

Before putting tools away, there is much to be gained by oiling the tools—'most any kind of oil will do. Nothing dulls the temper of tools more than rust, and by using a little foresight there is much to be gained in this way. Treat tools right. Never abuse a screw driver by using it for a cold chisel, or a wrench for a hammer. You owe it to yourself to give tools reasonably good care, and they will live up to the claims the manufacturers make for them.

Pliers

To get the best results from a pair of pliers, keep the joint well oiled. To get correct leverage, grasp the plier handles well away from the joint.

(Reproduced by Courtesy of Smith and Hemenway Co., Inc., Irvington, N.J.)

FREIGHT RATES REDUCTION

A general reduction of 10 per cens in freight rates on all steam roadt under the jurisdiction of the Board of Railway Commission went into effect on December 1.

HART BATTERY CO. OPEN TORONTO OFFICE

THE HART BATTERY CO. announce that they have opened a sales office and warehouse at 155 King St., W. Toronto, Ont. In addition to their head office at Montreal, and works at St. John, P.Q., they now have offices in Toronto and Winnipeg.

Lieut.-Governor of Ontario Stresses Importance of Trade Paper

THE Lieutenant-Governor of Ontario, Col. Henry Cockshutt, himself a successful business man, and president of the Cockshutt Plow Co., Brantford, Ont., paid a fine tribute to the business papers of Canada when speaking at a luncheon in connection with the annual meeting of the Canadian National Newspapers and Periodicals, Association, at the King Edward Hotel, Toronto, on Thursday, Nov. 10. He said:

"I am especially glad to be with you to-day because I believe that the influence of the business press will be one of the most important factors in re-establishing business conditions in Canada on a safe and sure basis. I make a distinction between the business newspapers and the daily press because I believe that your papers—the business newspapers of Canada—exert a greater influence than the daily press because of the greater confidence your readers have in them. People read the daily newspapers to keep abreast of the general news of the day. They are interested in what is happening around them and they read to satisfy their desire for excitement or interest or entertainment. What they read in the daily newspapers to-day is forgotten tomorrow.

"But this is not the case with the business newspapers. Business men need the service of these papers in the conduct of their everyday business life. I have noticed that they usually have a business paper or two in their pocket when they go home Saturday night. I do not say that they read them on Sunday, that I do not know, but I do know that they study them carefully and that a great number of your readers, will come to their business on Monday morning with some clipping from your paper in their pockets. They will say to their associates, 'This is the situation, I can show it to you in this clipping.' For that reason, gentlemen, I say that yours is the greater obligation because you are leaders, because you are helping to build up the business fabric of the country.

"You should be very careful that everything that appears in your columns bears the imprint of the truth. You must be sure that the news you give is correct beyond question, because there are thousands of your readers ready to set their business course by the news and advice you give them. I am familiar with a good many of your publications and I can personally attest to their high character. It is of vital importance that this high character should be maintained, and that no effort should be spared to give in your columns the maximum of service.

"In these days when there is disorganization, dissension, disruption in all walks—business, politics and religion, there is a great place for the business paper to bring out more complete information, to assist in making us all realize we must work for a common cause, the upbuilding of our country. The business men of this country need your assistance. They are looking to you for information and advice, and are expecting it. On your shoulders therefore perhaps more than on the shoulders of any other single agency, rests the obligation to meet the needs of these trying days, with a sane and sound presentation of the case as it exists at the present time, a presentation free from private bias, or the desire to serve a popular demand.

"You can, and I believe will be one of the largest factors in helping to bring about a satisfactory readjustment of the business conditions of this country."

We publish Lieutenant-Governor Col. Henry Cockshutt's task verbatim because it reflects what our journal stands for. We are always adding one more link to our chain of service, and the convention which has just closed was really a gathering of forces to discuss ways and means of improving and adding to our present policy, so that our readers could be offered only authentic and valuable material.

Pleads for Larger Discounts

THE following letter, addressed to all the leading farm machinery manufacturers selling their products in Ontario, asking that discounts to dealers be increased, has been sent out by Llewelyn Hall, President of the Ontario Implement Dealers' Association:

"On behalf of the Retail Implement Dealers' Association of Ontario, and in your own interests, gentlemen, I have some suggestions to make, with a view to bringing about more satisfactory conditions in the retail implement business of Ontario.

"We want your co-operation, and need it more vitally than at any time in the history of the implement business in this Province.

"The retail implement business in Ontario is in a bad way. The poor business of the past year has resulted in the financial embarrassment of the dealers to such an extent that their prospects of success for the coming year are anything but bright.

"To be perfectly frank, your dealers, as a class, are the most discouraged set of men imaginable.

"How can you hope to do a satisfactory business under these conditions?

"There is not a dealer in Ontario (who runs a business, pays taxes, keeps travelers on the road, and who does a business that could be classed as satisfactory to all concerned) who can carry on continually for a period of five years on the margins at present allowed him by the manufacturers.

"The discounts must be made larger. In order to enable the dealer to make a decent living after providing for his selling expense, I would suggest that not a cent less than 25 per cent. off the list is adequate for one-pay sales; 20 per cent. off on two-pay sales, and 17 1-2 off on three-pay sales.

"In return for these increased discounts the dealers would endorse and guarantee all accounts.

"Roofing, fence and fertilizer manufacturers, who are in the habit of allowing the trade 7 1-2 to 10 per cent. off the list, should increase their discounts to at least 20 per cent. Their goods cannot be profitably handled by the dealer for less money.

"It is to the interest of the manufacturers to have efficient, prosperous dealers. Now is the time for the manufacturers to do something to show that they want good dealers.

"There never was a time when better treatment would be more appreciated by the dealers.

"If the scale of discounts that I have, on behalf of the Ontario Dealers' Association, suggested were to be put into effect, the manufacturers would be astonished at the difference that it would make in their sales.

"The dealers would get good, safe business, and would be pegging away every day. They would have some heart in their work because it would not be merely a case of swapping dollars. They could see a living profit in their work.

"The retail implement dealers of Ontario are looking to the manufacturers for a new and better deal. In helping the dealers, the manufacturers will be helping themselves, and in the only way that they can help themselves as far as the dealers are concerned."

BURD
Quick Seating
PISTON RINGS

The outer edges—the Quick Seating feature—lap in quickly, producing a seat in perfect harmony with the hard glass-like surface of the cylinder, resulting in maximum efficiency for this type of ring in the minimum time. Seating is accomplished in about one-fifth of the time required for plain surface rings.

One Piece — Easy to Install

The slow, laborious "lapping in" and the annoying delay before the owner can use his car is eliminated. Burd Quick Seating Piston Rings have won the instant approval of mechanics and motorists. Millions of them are in successful operation. The simple Step-Joint gives the minimum opening and prevents leakage.

Sizes up to and including 4 inches, 75c.
Sizes over 4 inches—up to and including 5 inches, 90c.

BURD RING SALES CO., LTD.
322 McINTYRE BLOCK, WINNIPEG, MAN.

Black and Decker
ELECTRIC, PORTABLE
DRILLS
and
GRINDERS
are Labor Savers and Money Makers for
THE GARAGE MAN

Ask for full information on our Six Months Payment Plan

KEYES SUPPLY CO. LIMITED
Wholesale Automotive Equipment
282 Sparks St. OTTAWA Queen 880

Automotive Accessories *and* Implement Equipment

B.-W. TESTER

THE B.-W. Electric Company have placed on the market the B.W. Tester for testing Ford coil units, single and double contact lamps, and spark plugs. The device consists of a low-reading ammeter, coil guides with contacts and spark gap, mounted on a hardwood case. It is fitted with an indicating toggle switch. All the fittings are nickeled. The tester is furnished in two types: type D—for direct current—is equipped with a direct current ammeter with cord and clips for connecting to standard six-volt battery or dry cells. Type A—for alternating current—is equipped with a transformer, alternating current ammeter, and cord with a standard plug for use in any alternating current lamp socket.

MANEX HEATER

THE Manex heater is designed for heating Ford cars. The makers say it furnishes an even distribution of heat throughout the car. It is an air chamber and conduit around and above the exhaust manifold. As soon as the motor is started, the manifold becomes hot from the exhaust. Pure air is brought in contact with the entire heat radiating surface of the manifold. The warm air rises to the apex of the air chamber of the heater and is carried back into the car through an opening in the dash, just above the level of the floor. A 2½-inch hole is cut through the dash with a key-hole saw or extension bit, over which a shutter is placed to regulate the heat. The air chamber is held about the manifold by two lugs which fit standard Ford construction. It is made by The Miller-West Co.

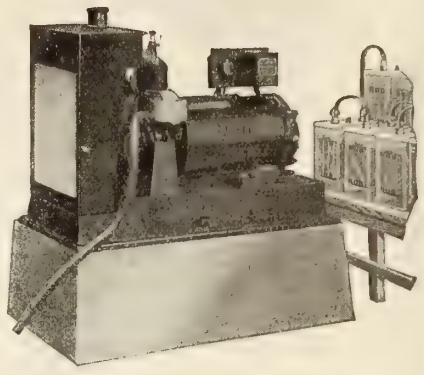
QUICK DETACHABLE MUD HOOK FOR TRACTOR WHEELS

THE ability to make quick changes, removing the wheel spikes and replacing without loss of time is a matter of great importance to the tractor owner. Helland's quick detachable mud hook is designed to meet this need. These are made in any size or style. They are held rigid in the rim of the wheel by means of dogs which are held in place by a spring inside the lug. They are made by Herman H. Helland.

MAIN I.K.W. POWER LIGHT PLANT

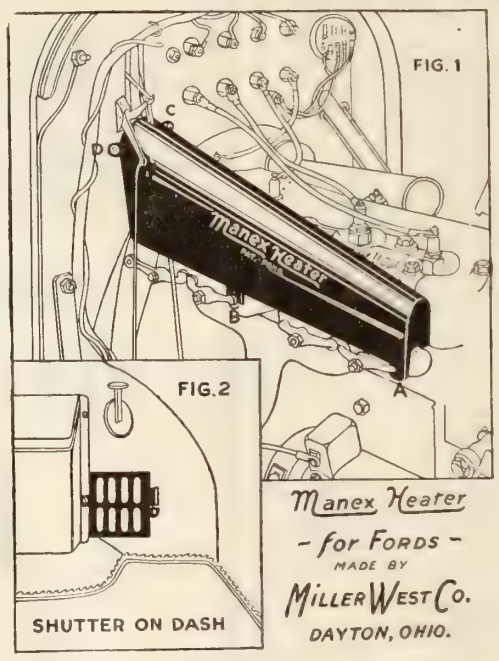
THIS plant is of the direct connected unit type. The engine, which is of simple design, with but three moving parts, uses either kerosene or gasoline as fuel. The plant consists of an engine, generator, automatic control board with meter, and a honey-comb type radiator. The engine is cooled by water through the radiator, with fan or crank shaft. The radiator holds only two gallons. The generator which has a capacity of 1000 watts, 50 lights of 20 watts each, has oil ring type bearings with large reservoir, insuring, the makers claim, lubrication for weeks at a time. The battery is of the sealed glass jar type, sixteen cells, 32 volts with a capacity of 60 ampere hours.

A 1½ K.W. set is also built with specifications practically the same, only a steel frame generator, and ball bearings are used. Made by the Main Electric Co.

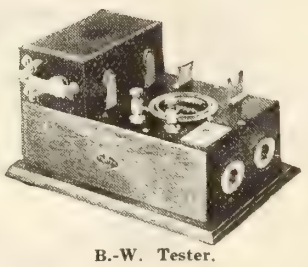


Main Power Light Plant

Detachable Mud Hook

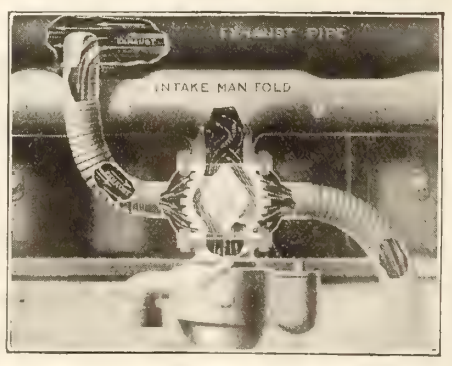


Manex Heater.



B.-W. Tester.

Anderson Spring Lubricator



Protect-O-Motor

Autolog.

THE ANDERSON SPRING LUBRICATOR

THE Anderson automobile spring lubricator is a protective covering and lubricator for springs, differing from other spring covers on the market in using grease, not oil, as a lubricant. This cover is coated thickly inside with grease, is laced and clamped snugly about the spring, then requires no more attention. It is claimed it affords constant, automatic lubrication over a period measured in years. Not only is it said to keep the spring in a permanent bath of grease, but it keeps out dirt, water, and mud, and prevents the formation of rust. The covers are made in real leather and in heavy artificial leather, in sizes to fit all makes of cars and trucks. Made by The Anderson Spring Lubricator Co.

AUTOLOG

THIS device is for recording the amount of gas and oil used by a motor. Every time the motorist takes on gas or oil, the autolog, the makers say, reminds him to jot down the amount through the pencil opening in the disc. The device is a nickel-plated instrument, two and a half inches in diameter, which fits right on the spoke of the steering wheel. A new card is inserted in the autolog each month, thus the motorist has at the end of each month a complete record of the motor's performance. It is made by the Autolog Co.

PROTECT-O-MOTOR

THE Losee, Protect-O-Motor, or Hot Spot, is designed for use on passenger cars, trucks and tractors, to eliminate troubles caused by unsatisfactory fuel vaporization. The Hot Spot is inserted in the mixture passage and so designed as to act as a separator for throwing out of the mixture stream, the suspended unvaporized fuel particles, and causing these particles to impinge upon metallic surfaces which are maintained at a moderately high temperature.

It is constructed of aluminum and steel; the body is cast aluminum, the gas mixture passage is corrugated, which, the makers say, not only increases the heating surface, but greatly assists in breaking up the gasoline. The removal jacket surrounding the aluminum casting is a steel stamping, nickel-plated. Exhaust gases are conducted to the Hot Spot through ⅞-inch flexible steel tubing. It is made by Losee Motor Products Co.

NEVEROUT HAND WARMERS

As the name implies, this device is for keeping the hands warm while motoring in cold weather. The hand warmers are placed on the inner side of the steering wheel, and are fastened by means of screws. The inside of the warmers is lined with green baize cloth to prevent the steering wheel from being scratched. Wires insulated with green cord extend from each warmer to a plug which can be inserted in a dash socket within easy reach of the driver. The current consumption is low. The warmers are nickelplated and made in voltages for all cars. Manufactured by the Rose Manufacturing Co.

The One Best Line for The One Best Dealer—

John Deere Quality Implements, Engines and Tractors

Manure Spreaders
Hay Loaders
Side Delivery Rakes
Sulky Rakes
Mowers
Plain Drills
Fertilizer Drills
Lime Sowers
Corn Planters
Corn Cultivators
Diamond Harrows
Lever Harrows
Spring Tooth Harrows
Disc Harrows
Stiff Tooth Cultivators
Walking Plows
Riding Plows
Tractor Plows
Grading Plows
Pavement Plows
Beet Planters
Beet Cultivators
Beet Lifters
Potato Planters
Potato Cutters
Potato Diggers
Potato Sprayers
Potato Sorters
Kerosene Engines
Tractors

A line of implements for the whole year, well established and in demand. Our new prices for 1922 are ready for you. If our traveller has not called, write us for full information on our 1922 proposition.

JOHN DEERE MANUFACTURING CO., LTD.

WELLAND ONTARIO

ALBERTA IMPLEMENT DEALERS FORM RETAIL ASSOCIATION

IMPLEMENT and power farming dealers of Alberta held a meeting at 210 9th Ave. East, Calgary, on October 20, with the purpose in view of forming an association to embody the retail trade in the province. At this meeting the problems being met with by the trade were discussed and it was decided that the only solution for the Alberta dealers was to combine in a trade organization. It was decided to form an organization to be known as "the Alberta Retail Implement Dealers' Association."

Temporary officers for the Association were elected as follows:

President, James Rennie, Chinook; Vice-President, Frank Murray, Claresholm; Sec'y-Treasurer, W. M. Jamieson, 210 9th Ave. East, Calgary; directors: Robert Wilkinson, Blackie; D. O. Frederickson, Castor and D. R. Morgan, Ponoka.

Preparations for the inaugural meeting were made by Mr. Jamieson, who states that he finds the trade all over the province anxious to unite as a means of securing better business conditions.

HOW THEY SELL TRACTORS IN MEXICO

BELOW is an extract from a letter that Jose Garcia Villalba recently sent to G. W. Pierce, who is manager of the Dallas branch of the J. I. Case Plow Works Company, in which he describes some of the adverse conditions under which tractors and power farming machinery are sometimes sold in Mexico;

"Yours of the 8th instant has just reached me upon my return from a trip to an Hacienda in the Michoacan State where I was sent by Senor Vidal three weeks ago. (Senor Vidal is President of the Companiа Industrial y Mercantil.)

"Senor Vidal had been trying to sell the owner of this particular Hacienda for about a year, and I had to make several calls and have several meetings with this man as he was slow to decide to purchase a tractor. He finally gave me an order however on the following conditions:

"First, Senor Vidal had to ship the tractor and J. I. Case plow to the prospect's Hacienda, 300 miles from Mexico City.

"Second, our dealers had to send a mechanic to make a ten days' demonstration at the prospect's Hacienda, plowing not less than 8 acres every day with 19 gallons of gasoline.

"Third, after the ten days' demonstration, and if the results were satisfactory, the prospect would buy the tractor and plow, and pay for all expenses.

"Fourth, in case the demonstration was unsatisfactory, the tractor and plow would be shipped back to Mexico City, the prospect paying only the transportation charges.

"In order to supervise and direct the demonstration I was sent to that Hacienda, which is 50 miles from the nearest railroad. I had to travel the 50 miles horse back, it being impossible to travel over those roads (if they could be called roads) by any other means. The roads go through mountains and woods, and I can assure you that it is not very agreeable to travel all day horse back with a burning sun, like the one they enjoy in this part of the country, and is not what you would call safe.

"The tractor and plow were sent from the railroad station to the Hacienda in a wagon pulled by oxen, who took three days to make the trip.

"The demonstration was very successful. We plowed 10 acres every day using only 18 gallons of gasoline. The Hacendads were well pleased with the plowing done, and purchased not only the one Wallis and Case tractor plow but ordered another as well.

"From this you can see the difficulties under which we are doing business in this country. This is the third trip of this kind that I have made recently, having to go a long way on horse back, and stopping at places where you can hardly find a half dozen civilized people. The meals are like the men. ."

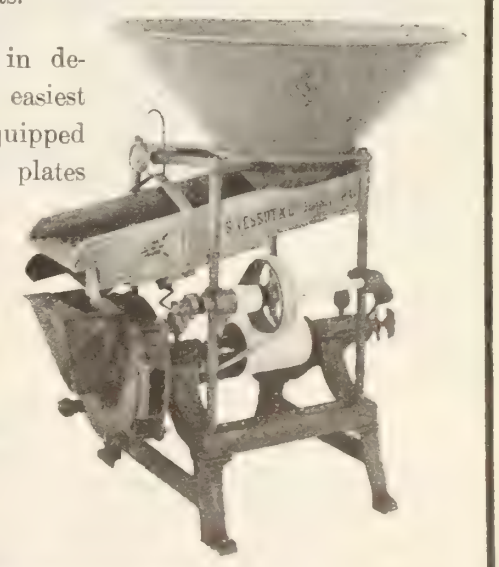
(Signed) Jose Garcia Villalba.

After reading this letter one cannot help but wonder how many tractor dealers, salesmen and service men would remain in their present business if they had conditions such as these to contend with.

Sell the Feed Grinder that gives the least trouble

TRADE MARK S.V. REG

Your customers are not millers or mechanics, but farmers. When a Feed Grinder is purchased your farmer customers want day by day service uninterrupted by breakdowns or needed adjustments.



Sell him a "Vessot"—simple in design, sturdy in construction, easiest to adjust and operate, and equipped with the very best grinding plates that can be made. The "Vessot" is easy to sell, most farmers are educated to look for the "S.V." The Sign of Value on the plates of the grinder they purchase.

A very substantial reduction in prices has just been made.

Get in touch with The International Harvester Company.

INVENTED AND MANUFACTURED BY

S. Vessot & Co., Joliette, Quebec

Sold exclusively in Canada by
International Harvester Co. of Canada, Limited

Branches: Calgary, Edmonton, Lethbridge, North Battleford, Regina, Saskatoon, Estevan, Yorkton, Brandon, Winnipeg, London, Hamilton, Ottawa, Montreal, Quebec, St. John.

TOPSY-TURVY AUTO REPAIR RACK

THIS rack consists of two stationary cradles—which must not be bolted to the floor—and a movable car carried on four wheels equipped with roller bearings. The makers say the largest car can be turned to a vertical position by simply turning the cranks, which turn the drums and wind up a 1-4 inch wire rope. The rack is so designed that a car may be run onto it from either side. The rack is equipped with a safety lock; and in releasing the car from its vertical position it returns to a horizontal position very slowly.

The rack is 14 feet, 4 inches long, 7 feet, 6 inches wide, 6 feet high to the top of curved rack and weighs about 1400 pounds. It is made by the Kenosha Boiler & Structural Co.

DOUBLE NEEDLE BURNER.

BOTH the Needles used in this burner have blunt points which makes it impossible for the user to enlarge the burner orifice. The lower needle "B" regulates the supply of gas and the upper needle "A" has a small wire tip "E" that cleans the orifice in the jet block "D." The safety stop "C" prevents the upper needle from being unscrewed too far. These burners are supplied with two jet blocks, one for burning gasoline, the other for kerosene. They are interchangeable.

The makers claim that these burners have large generating power, with the consumption of fuel reduced to the minimum. This it is claimed being due to the improved construction of the burner and the long vaporizing chamber "G" and vein tube "H" through which the gas passes, causing it to become superheated before entering the combustion chamber. Made by the Clayton and Lambert Mfg. Co.

RAMSPRING BUMPER

THE Ramspring bumper, made by The Ramspring Bumper Co., is different from other bumpers in point of principle and construction.

This bumper uses a sturdy pressed steel section, connected to a small vertical cylindrical housing secured to the frame. Within this housing is located a heavy coil spring, suitably connected to the front section of a lever arm and a connecting rod. The operation is simply one of winding the coiled spring up when an obstruction is encountered.

The front section of the bumper is of pressed steel. This member has a heavy channel section and the width of the channel varies from about 3-4 in. at the tips or outside edges to about 2 in. in the center. At each of the two vertical members of the front section is located the connection for the forked member or connecting rod that is secured to the lever arm which in turn is secured to the coiled springs. The result is that a flexible installation is made which protects against head-on and side blows. One side may be deflected without materially deflecting the other side. The action of the coiled spring may be varied by changing its tension, which is done by loosening the nut on the bottom and winding up the bottom cap. The bottom cap which holds the spring tension is serrated with heavy square teeth.

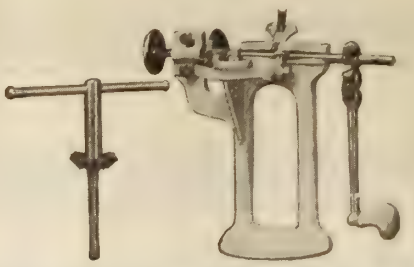
AUTO GLARE DIMMER

The device fits on the windshield and filters the blinding glare of approaching headlights. It is claimed with this device the driver has a clear vision of the road ahead at all times. It is made of metal, the frame being spring brass, strong and substantial. The dimming effect is obtained by the use of a special woven bronze screening of very fine mesh, the whole being heavily nickel-plated.

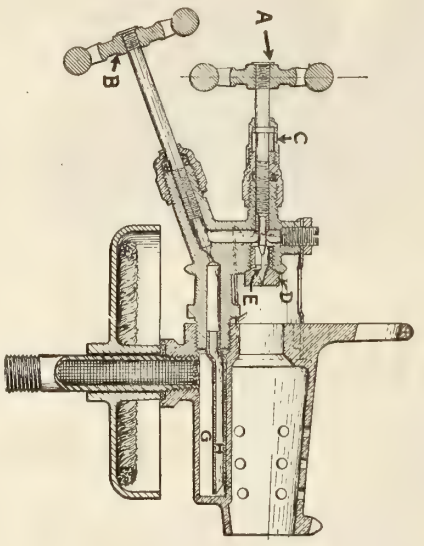
The device fits any car and is adjustable for the height of the driver.

When not in use a touch of the fingers flips it out of the way. It is fitted with rubber bumpers. It is made by the Ray Filter Company.

Veco Bearing Cap Vise.

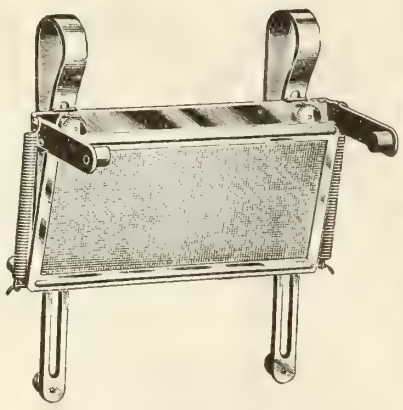


Whitney Valve Repairing and Valve Reseating Tool.



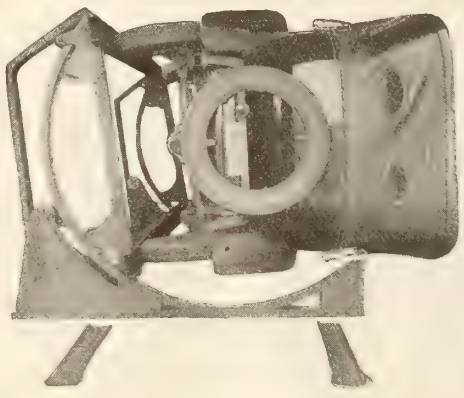
Double Needle Burner

Critz Lubricator



Auto Glare Dimmer

Ramspring Bumper



Topsy-Turvy Auto Repair Rack.

CRITZ LUBRICATOR

THIS is a pressure lubricating system consisting of a lubricator and a series of fittings which replace the former grease and oil cups. The lubricant is applied without hose or conductors direct to the bearings by means of a patented ball check head. This is swiveled to operate in any direction, and also controls the flow of lubricant so that it is unnecessary to unwind the lubricator after each bearing is lubricated. This lubricator is adapted to automobiles, trucks and tractors. It is made by the Lathan Auto Supply Co.

SAFETY OILING SYSTEM FOR FORDS

THIS oiling system consists of a small trap and a pipe connection. The trap guides the oil to the transmission, the pipe guiding it to the front of the motor. The trap is installed in place of the transmission cover plate. It is placed close enough to the flywheel to catch and trap the oil splashed off of it. Part of the oil is carried by the shovel arm of the trap to the transmission and the balance is carried through the pipe connection at a sharp angle downward around the outside of the motor and back to the crank case at the timing gears. The pipe connection takes a drop from a height equal to the footboards to the bottom of the crankcase and this sharp drop insures sufficient lubrication regardless whether the machine is on a grade or not. The trap also acts as a filter, removing such foreign matter as torn brake lining and pieces of babbit. Made by the Safety Oiling System, Inc. 2203 Fairmount Ave. Philadelphia.

WHITNEY VALVE REPAIRING LATHE AND RESEATING TOOL

THIS lathe is designed to be mounted on the bench or held in a vise and is adjustable to take any valve ¼" to ½" stem diameter and valve head up to 2¾" in diameter. By lifting a gate in the top of the lathe, the valve may be laid in a V channel which acts as a guide for the valve stem while a tension screw holding the gate against the stem allows the valve stem to be rotated freely, and at the same time the centering adjustment or feed control is mounted on a sliding block, traveling on a guide to insure accurate centers.

The cutter is mounted on a firm base and held in place by two screws, one acting as a pivot on which the cutter swings to the desired angle, while the other screw acts as a lock on the adjustment. The crank which is attached to the end of the valve stem to revolve it against the cutter, is provided with a tension slot and several adjustments to meet the varying valve stem sizes.

In the combination valve reseating and valve port resurfacing tool, both the reseating and resurfacing cutters are made in a unit which is placed on a threaded spindle provided with a bar to revolve the cutters. The reseating cutter is on one side of the unit while the resurfacing cutter is on the other. Either cutter may be used by placing the unit on the spindle with the particular cutter desired facing the work. Both tools are made by the R. S. Whitney Mfg. Co.

VECO BEARING CAP VISE

THIS vise holds the main bearing caps and also the rod caps in such a way that the ends of the caps can be fitted carefully. All working surfaces can be operated on without moving the bearing. It is substantially constructed. The makers are the Keystone Garage Equipment Co.

MAYBE ADAM LAUGHED AT THESE

The Blowhards.—Reuben: Longfellow said that in this world a man must be either anvil or hammer.

Glyn: He was wrong. Some men are neither. They are merely bellows.—Edinburgh Scotsman.

When Is a Lost Ball?—This bit of irony, sarcasm or something appears in the form of a sign on a Scottish golf course: "Members will refrain from picking up lost balls until they have stopped rolling."—Boston Transcript.

Couldn't Help.—"Can I be of any assistance?" asked the sympathetic motorist of a man who was looking unutterable thoughts at a disabled car.

"How's your vocabulary?"

"I'm a minister, sir."

"Drive on."—Birmingham Age-Herald.

Caustic Dave.—Dave C. stepped into Ed. Wise's the other day and asked "the man who knows" for a pair of sox.

"What number?" he queried.

"Two, you poor dumbell! Do I look like a centipede?"—Hollywood High School News.

Surrender? Never.—"Why don't you get rid of that horse if he's so vicious?" asked one farmer of another.

"Well, you see, Jim," replied the other. "I hates to give in. If I was to sell that horse, he'd regard it as a personal victory. He's been trying for the last six years to get rid of me."—Pittsburgh Chronicle-Telegraph.

Good Backing.—"So Jack is a candidate for your hand."

"Yes, a machine candidate you might call him—he owns an automobile."—Boston Transcript.

And Brought Him Henri.—Haskett: Some terrible things can be caught from kissing."

Leslie: You ought to see the one my sister caught!—Answers, London.

Liquid Measure.—Nipp: How far is it to the next town?

Chauffeur: About three flasks.—Life.

The Power.—Don't you think your wife would like a power churn?" insinuatingly asked the implement dealer.

"She's got one now," replied the gaunt Missourian.

'Ah! What power operates it?"

"Me."—Kansas City Star.

Slight Favor Requested.—An Eastern college graduate applied for work in a lumber camp and was assigned to one end of a cross saw, the other end being in charge of an old and experienced lumberman. At the end of an hour the veteran stopped sawing and regarded his weary partner with pitying eyes.

"Sonny," he said, "I don't mind your riding on this saw, but if it's just the same to you, I wish you'd quit scraping your feet on the ground."

Silent Adoration—What surprises me most about Scotland (writes a visitor) is not the absence of haggis and the kilt, or the presence of finely metalled roads, but the silence of the barbers' shops. Artist and client say nothing more to each other than the few words necessary for the success of the operation in hand. When I remarked on this phenomenon to a much-traveled Scot, "Aye," he commented, "they're both thinking hard about the tip."—London Morning Post.

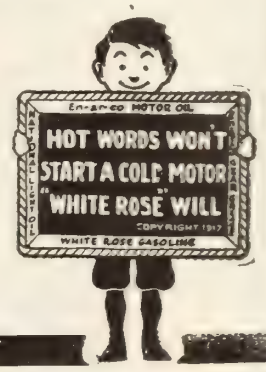
Have You Used The Boy and Slate

IF you have not and you do not know all about this wonder-working, sales producing life size Boy and his big slate—there's something you have missed. Let us explain this Boy and Slate Sign. The particulars will not cost you anything—and they should be in the hands of every garage man, and every dealer in gasoline, oils and lubricants. Write one of these En-ar-co branches.

Address Dept. "M. T. I. 12"

CANADIAN OIL COMPANIES LTD.

Branches:
Toronto, London, Montreal, Quebec, St. John, Halifax, Winnipeg, Regina, Saskatoon, Edmonton, Calgary.



GASOLINE MOTORS
$50.00 and up
4 CYLINDER——4 CYCLE

20 horsepower and up, these motors are taken from high-priced automobiles, and can be used for any purpose where power is required. Hundreds of these motors in use all over Canada are giving satisfaction in motor boats, tractors, cutting boxes, sawing wood, running machinery, etc. We also carry the largest stock in Canada of slightly used parts for motor cars of all kinds.

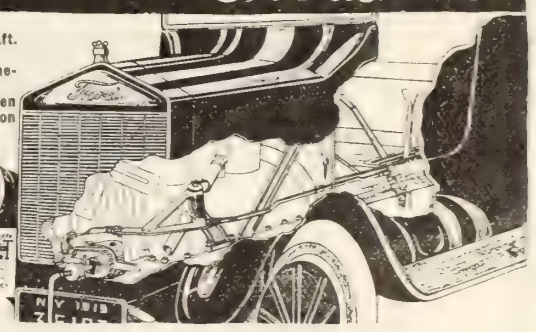
Satisfaction or refund in full, our motto.

Shaw's Auto Salvage Part Supply
927-31 Dufferin Street
TORONTO

Simple, Durable, Economical, Reliable,

BARRETT SELF STARTER AND PRIMER
GUARANTEED FOR FIVE YEARS — For all Fords — $40

RELEASES automatically in case of backfire and does no harm to the operator, engine or starter.
No cables, no chains, no pulleys and no springs to wind.
75% increase of leverage on crankshaft.
Easy to install, no holes to drill.
It STARTS COLD ENGINE instantaneously even in zero weather.
Ready for starting any time and as often as wanted because it does not depend on the running of the engine for power.
All essential parts made of the very best steel.
ABSOLUTELY NOISELESS.
Not a luxury but a necessity.
Endorsed by prominent automobile engineers and mechanical Ford experts as mechanically perfect in every respect and the best that has come under their observation.



The Special Primer which is supplied free with every Starter, vaporizes the gasoline direct into the cylinders, assuring a quick, positive start. The Primer is also operated from the seat.

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IMPERIAL AGENCIES, 195 Victoria St., TORONTO

Dealers, Attention!

Get our proposition on

Portable Saw-Mills,
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Gasoline and Kerosene Engines,
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Emery-Grinders,
Water Bowls,
Plow-points, etc.

GRAY IRON AND BRASS CASTINGS

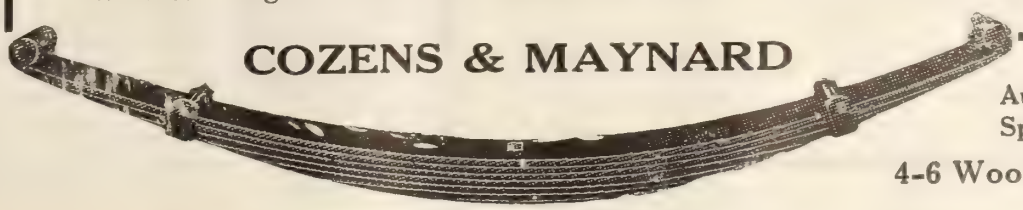
The Cochran Foundry and Machine Works
TILLSONBURG :: ONT.

See our Buyers' Directory on page 23. This page will help you considerably in selecting equipment.

Never been stumped yet

Do not hesitate, no matter how out-of-the-ordinary the required spring may be. We have a highly specialized staff and the necessary equipment to turn out or to repair springs of any description. We have never had to turn down a job yet, and every job we've tackled has been completed to the satisfaction of the owner of the car or truck.

Send us a trial order when you have a ticklish spring building or repairing job on hand. We also straighten axles and chassis frames on all makes of cars and trucks.



COZENS & MAYNARD
Automobile and Truck Spring Service Station
4-6 Wood Street, Toronto

What Income Can $10,000 Produce Without Danger?

"An inquiry has been received from a woman with $10,000 of 1937 Victory bonds which represents practically her entire capital, and the interest from which comprises a very large proportion of her income. At the outset it may be explained that she has no dependents and is therefore not interested in leaving her capital untouched at her death. At the same time she is just past middle age and to begin to use part of her capital for expenditures would be too serious a matter to be dismissed. She can purchase a Dominion Government annuity of $822 beginning at once and continuing until death for $10,000.

"What should she do? Should she buy the annuity, she inquires, or could she find a fairly safe investment yielding 8 per cent. for fifteen or twenty years, such for instance as second mortgage bonds or hotel debentures?

"The problem was submitted to four investment officers, and their replies are published below." . . .

Beginning of an article in THE FINANCIAL POST, November 18 issue.

Would You be Interested in the Answers? Have You Some Money You Want to Invest?

If—like the inquirer with $10,000—you have problems to consider, you would benefit by receiving weekly THE FINANCIAL POST.

Practical articles like the above are weekly features.
Information on various investments show opportunities for profit.

Consider One Opportunity for Profit Pointed out by the FINANCIAL POST

You hold $5,000 Victory Bonds 1937 maturity, and your total income is less than $2,600. You have three children. No. 1937 Victories are tax free and therefore sell higher than taxable bonds. But you have no taxes to pay, for incomes of $2,000 and less are exempt with married people, and there is $200 additional exemption for each dependent child. You could (November 17 price) sell 1937's at $101.40 and buy 1934's taxable bonds at $96.70. Therefore you have this problem:

Sell $5,000 1937's at $101.40	**$5,070.00**
Buy $5,000 1934's at $96.70	**$4,835.00**
Cash profit	**$ 235.00**

Revenue income from $5,000 5½% bond in each case $275.00 per year.

Or, if your total annual revenue is more than $2,000 but less than $6,000 per year (where super taxes start) you would face this problem:

Taxes on $275.00 1937 (non-taxable) V. Loan interest	**$ 0.00**
Taxes on $275.00 1934 (taxable) V. Loan interest 4%	**$11.00**

Immediate profit by selling 1937's and buying 1934's (as above) — $235.00, much more than enough to pay the tax until the maturity of the bonds.

You will enjoy the POST for such suggestions—for its information on investment matters, and for its

MUNICIPAL GOVERNMENT ARTICLES
POLITICAL ARTICLES
ANSWERS TO INQUIRIES
REVIEW OF BUSINESS CONDITIONS
SANE EDITORIAL VIEWPOINT
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Make sure of receiving the practical business paper. It will assist you in keeping your money working profitably and yet safely. Fill in the attached coupon.

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Enter my subscription to THE FINANCIAL POST for one year (52 issues) to start at once. I enclose $.....
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Dairy *and* Household Supplies

How An Ontario Dealer Sold Six Hundred Separators In Fourteen Years

TO SELL over 600 cream separators in fourteen years and in one of those years to hold the lead for the most sales of the season among Ontario agents west of Toronto, is the record of Charles R. Stevenson, implement and hardware dealer of Chatham, Ont. And this in competition with numerous other makes of separators and their representatives in the district bidding for the field.

"Service," Mr. Stevenson gave as the keystone to his success in selling cream separators. Given a line on a prospect, the next step was to bring him to the store. There models of the separators were on display, illustrated instructive literature was ready for distribution, a proficient salesman ready to explain, operate and give all information regarding the line, from its

CHARLES R. STEVENSON

known record of service to the final consideration of terms and payments. No price variation was ever made; each person paid the same price irrespective of station, nationality or wealth. Payments were made as easy as possible, and when the sale was made the machine was always delivered by the hardware men themselves.

"We never let a machine go out without going with it," stated Mr. Stevenson. "We set it up, thoroughly explained everything and put the first milk through ourselves, and were sure that everything was in first-class runing order before we left."

Every detail in assembling and disassembling the machine and its washing was shown, and the salesman watched the actual carrying out of these operations by the customer before leaving.

Mr. Stevenson explained that there were four periods in the year in milk separating, and the understanding of these was necessary for satisfaction in separator milk skimming. These periods are:

1. The new milch cow.
2. The cow on grass in the spring.
3. The near-dry cow on fall grass; and
4. The cow on dry feed in the winter.

A different density of the milk prevails for each period, and the skimming device of the separator must be regulated accordingly. A thorough explanation of this was a point he always made clear when installing the separator. Every detail was covered from oiling to adjustments and nothing forgotten that tended to insure the maximum of service being derived from the separator.

With the machine sold and running properly it was the best advertisement the line could have. One such machine placed in a new neighborhood paved the way for more.

Asked as to the method of pushing the machine and lining up of prospects, Mr. Stevenson stated that some of his prospects were found when on the road selling machinery, many were reached by phone, others by mail, and still others were found among those who came to the store for other goods.

To get the people to the store and see the machine was his first consideration. Prospects were invited personally, or over the phone or by mail; the point was to get them interested enough to call.

Once they were there they were shown everything and made thoroughly acquainted with the separator and the advantage of handling milk by the separator route.

Strong emphasis was laid on giving a thorough knowledge of the machine and its working and care. The running of a cream separator is vastly different from a wheelbarrow—and there are those who need educating from the wheelbarrow stage up before being entrusted with a machine such as a cream separator.

Another feature in the running of the machine lay in the speed at which it should be run. The timing of the crank revolutions and the maintaining of a steady speed was a point brought out in the personal instructions. This close attention to detail insured "service"—the point given as the basis for successful cream separator selling.

Repair parts in stock insured speedy restoration of those machines in which usage or time necessitated a duplication of parts. That the product should give service and that responsibility did not cease with the sale of the machine, but continued till it reached its destination and was a running, service-giving institution, was the policy followed by Mr. Stevenson throughout fourteen years of cream separator selling.—Hardware & Accessories.

VALUE OF SEPARATORS SOLD IN CANADA LAST YEAR

THE Dominion Bureau of Statistics, Ottawa, has issued the following data covering cream separators for the year ending March 31st, 1921. Cream separators made in Canada total 31,001 with a value of $1,683,634. Cream separators imported from all countries 24,383, with a value of $956,785, and exports amount to $157,208. From these official figures it may be seen, by subtracting exports, that the total value of separators purchased in Canada last year was $2,483,211. Of this amount the Canadian production, again minus exports, was $1,526,426, a proportion of 61 per cent.

MASSEY-HARRIS BRANTFORD PLANT RESUMES PRODUCTION

OPERATIONS recommenced at the Brantford plant of Massey-Harris Co. on Monday Nov. 28 with about one third of a normal working force going on a three-day-a-week shift. The plant in question has been closed several months. It employs about 1,000 men normally. The likelihood is that production will continue at the rate indicated above until next spring. Binders will be produced at the Brantford plant for both home and export trade.

Another Massey-Harris plant, the Verity Plow Co. Works of Brantford, will close down for stock-taking on December 1, releasing about 350 employees, temporarily at least. It has been the custom to take inventory at this season. The Verity plant has been working on a special export order for several months.

JOHN DEERE PRICES REDUCED

THE John Deere Mfg. Co. Limited Welland, Ont., have issued their new 1922 prices, both wholesale and retail, effective Nov. 1st, 1921.

The new prices are not any fixed percentage of reduction from the 1921 prices some goods carrying a lesser reduction—others a greater reduction, depending on the class of material entering into the construction of the machine, and the labor involved; approximately the new prices will average perhaps 20 per cent under the 1921 schedule.

They are absorbing a loss on inventories on hand, and have written this down to the anticipated cost for 1922 so as to give the benefit of the lowest price possible to the dealers and farmers for 1922, and to induce more substantial buying on the part of the farmers.

In view of the reduction already made it is stated these prices will go throughout the season of 1922 without change. No further reduction is anticipated until transportation rates and wages, and coal prices are reduced very materially from their present high peak.

I. H. C. PUTS OUT COW BOOK FOR DEALERS

THE International Harvester Co. have published a book to be distributed among dealers and farmers, entitled, "The Cow, the Mother of Prosperity," written by Ralph A. Hayne. This book should be in the hands of every dealer who is interested in improving conditions on the dairy farm.

The book deals with the urgent need of cows to maintain our agricultural supremacy; emphasizes the necessity of better herds; how to judge dairy cows, including several dozen illustrations of good points to be desired and bad points to be avoided; how to tell their age; proper methods for raising calves; care and feeding of herds; advantages and proper sizes of silos; feed for winter; balanced rations; best kinds of barns; need for sanitation and ventilation; need for modern equipment; best methods of handling dairy products; building up soil fertility; dual purpose breeds; diseases, pests, troubles, etc.

SUCCESS OF NATIONAL TRACTOR SHOW ASSURED

THE Demonstration and Show Committee of the Tractor and Trade Division of the N.I.V.A. met in Chicago October 18, and discussed plans for the National Tractor and Power Farming Show, which will be held at Minneapolis and St. Paul on February 6 to 11, 1922.

The success of the show is assured, according to the report of Manager E. E. Whaley, which shows that over one-third of the space has been requisitioned to date.

A decision of far-reaching importance was made by the committee in deciding to invite manufacturers of road building machinery and the manufacturers of other lines of farm power equipment, such as farm lighting plants, gas engines, milking machines, etc.

It was decided to call this show the National Tractor and Power Farming Show, to include all of the machinery and equipment which would be exhibited there.

This show will be held at the same time as the automobile show and an admission charge of 50 cents will be made, although complimentary tickets will be available for the dealers and others directly interested in the show.

While there is no idea in the minds of the committee of any competition between this show and the automobile show, nevertheless it is significant that Manager Whaley was instructed to secure high-class entertainment features for it, thereby putting it on a basis comparable with the automobile show.

COCKSHUTT PLOW CO. PAID TAXES IN CASH

BRANTFORD, ONT., Nov. 21—"The Cockshutt Plow Co. paid its tax in cash and on time," was the reply of Vice-President and General Manager George Wedlake to-day when asked as to the story from Ottawa that the company gave a note for $760,000 for taxes.

OTTAWA, Nov. 21—"Absolutely untrue," was the comment of R. W. Breadner, commissioner of taxation, this morning, in reply to statements respecting arrears of business profits taxes alleged to have been made by David Loughlan, Progressive candidate, Ottawa, on Saturday night. The statement to which Mr. Breadner had reference is that the Cockshutt Plow Co. had given promissory notes for $760,000 and the Canada Steel Corporation, promissory notes for nearly a million dollars in payment of taxes.

CANADIAN HIGHWAY ASSOCIATION FORMED

HAVING for its objective the promotion, encouragement and establishment of a continuous highway across the Dominion from Cape Scott at the northern extremity of Vancouver Island to the most easterly extremity of Nova Scotia, the Canadian Highway Association was formed recently at Victoria, B. C.

Organization of this body is in part an outgrowth of the appointment of a special Canadian Highway Committee by the directors of the Victoria Chamber of Commerce. It was the conception of Ald. A. E. Todd, who was chairman of the Chamber's Committee and who during the past fifteen years has been active in practically every important association in Western Canada having for its purpose the construction and maintenance of better roads.

John L. Beckwith was elected president of the new association. Lord Byng, Hon. Arthur Meighen and Premier Oliver will be asked to act as patrons.

Samuel Hill, of Seattle, international good roads enthusiast, was chosen as honorary president.

The vice-presidents are F. R. McD. Russell, of Oak Bay; and Alderman A. E. Todd, of Victoria.

FORM NEW AUTO TOP COMPANY

THE Winnipeg Top and Trimming Company are at present erecting a new building at 780 Portage Avenue, Winnipeg, which they expect to occupy on November 1st. They have been carrying on business up to the present time at two different locations, one at 424 Graham Avenue and the other at the corner of Portage Avenue and Victor street.

A new limited liability company is being organized with a paid-up capital of $20,000 and the stock and good-will of the Auto Top and Supply Company, who have been doing business along the same lines, has been purchased. The personnel of the new company is composed of men who have spent their lifetime at this kind of work. They have all been residents of Winnipeg for the past fifteen years.

Sell the line already half sold

By Sheer Merit

—the Lister line has won the confidence of farmers, not only in Canada, but all over the world.

In these times when the farmer buys with greater care than ever before, the reputation of the Lister line is alone sufficient to give an impetus to your selling.

The Canadian farmer **knows** he can depend upon Lister Machines; therefore you can sell him Lister machines where you could sell no other line.

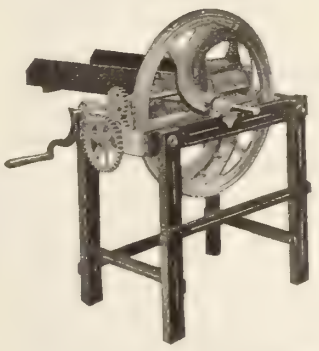
Lister Engine—Melotte Cream Separator—Lister Milker—Lister Farm Lighting Plant—Lister Grinder—Ensilage Cutter, etc.

R. A. LISTER & Co. (Canada) Limited
TORONTO and WINNIPEG

Have a Slice!

of the big business lying all around you for

Peter Hamilton
Hand and Power



No. 6 STRAW CUTTER
Hand or Power

Boost Straw Cutters and up go engine sales

Feed Cutters

Results from other farm lines may or may not be making you happy. Come! Get busy on Peter Hamilton Feed Cutters and reap a harvest of sales like other dealers all over the country are doing. All sizes of feed cutters from hand power to power run machines for big stock raisers. Territory open for live dealers who want

Big Business

We'll help. Circulars for distribution to your prospects. Write right now while the selling is good! Get your slice of good territory NOW.

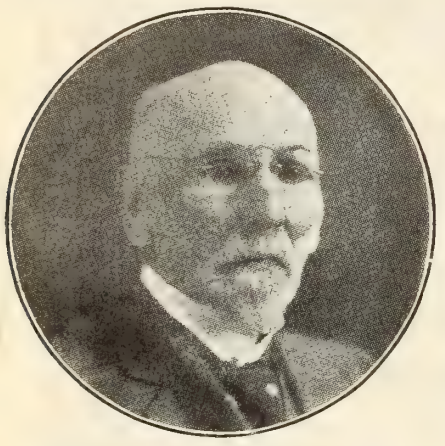
Peter Hamilton Co., Limited
Makers of Agricultural Implements
Peterboro Ontario

Robert McLaughlin, Founder of McLaughlin Motor Car Company, Dies In His Eighty-Sixth Year.

FOLLOWING a few days' illness which was the only sickness he had had during his long and eventful life, Robert McLaughlin founder of the McLaughlin Carriage Works and of the McLaughlin Motor Car Company, died at his home, Simcoe Street, Oshawa, Ontario, on November 23, in his eighty-sixth year. His death was not unexpected, as he had been seriously ill for some days, having taken sick on Armistice Day.

One of his sons, R. S. McLaughlin, President of the General Motors of Canada, was in England attending the Olympia Motor Show, at London, when his father took ill. He was cabled to come home and arrived in time for the funeral.

The funeral of Mr. McLaughlin took place on Saturday, November 27, from the Presbyterian Church, Oshawa and was attended by thousands of citizens, and by representatives from outside business concerns, of the State and of local, fraternal and religious bodies, and relatives and friends. It was the largest funeral in Oshawa's history.



THE LATE ROBERT McLAUGHLIN

One of the pioneer manufacturers of Canada, Mr. McLaughlin long enjoyed the respect and confidence of his business associates, and his reputation as a successful business man is well known throughout Canada.

He was born near Peterboro, Ontario, on November 16, 1835.

Even as a young man while working on the farm, he spent his spare time in making axe handles, whiffle trees, double trees and other articles of utility. He took as much pride in turning out a neatly fashlioned, well finished and durable axe handse as the average farmer takes in his prize tock. The product of his toil was sold to the nearby farmers who were not gifted with the same skill in craftsmanship. His heart was not in his fifty acre farm, so he built a shop in Enniskillen in 1869 and started business with a staff of one journeyman carriage builder, one blacksmith, one apprentice with himself as manager, designer and painter.

For the first few years he had an uphill fight. The manufacture of carriages, buggies, wagons and cutters was an infant industry in 1869. The country's needs were supplied principally by small manufacturers who distributed their product locally. As season after season went on Mr. McLaughlin had to go farther afield to dispose of his factory's output. In the year 1872 the factory staff consisted of eight men and the demand for his vehicles kept on growing.

In the year 1893 Mr. McLaughlin reorganized the business, taking into partnership his two sons G. W. and R. S. McLaughlin.

Very soon after the advent of G. W. and R. S. McLaughlin to the business, the quarters on Simcoe St. became too cramped for the volume of business done. An exchange was made with the town whereby the firm acquired the old Gibbs Furniture Factory. The opinion was prevalent among Oshawa citizens that the new quarters were too large for the McLaughlin Carriage Company. It was not long however until even this plant was found inadequate and additions had to be made.

In 1899 the entire factory was destroyed by fire. A valuable chain of selling agencies had been established and in order to retain this organization intact Mr. McLaughlin leased an empty factory in Gananoque where McLaughlin vehicles were built during the time of the erection of the new factory, at Oshawa, which is still in service and utilized in the manufacture of McLaughlin Cars.

Formation of McLaughlin Motor Car Co.

Methods of transportation began to show signs of a change. In the United States the motor car was gradually displacing the horse-drawn vehicle where speed was an essential feature, and so it became evident especially to the junior members of the Company, that motor car transportation was going to be an important rival to the carriage business.

In 1907 a new organization was formed in the name of The McLaughlin Motor Car Company, Ltd., with R. S. McLaughlin as President, G. W. McLaughlin as Treasurer, and O. Hezzelwood as Vice-President. Robert McLaughlin, although in his seventieth year, was perfectly agreeable to the new venture, and joined the new company as a director. In the meantime the efforts of the Carriage Company did not slacken, and the business increased.

The McLaughlin industry grew in importance. Carriage building had seemingly reached its highest point in production. The principals of the company realized that the possibility for expansion in the carriage business had about reached its limit, while in the motor business, they were just on the eve of development.

In the year 1915, the carriage department of the business was sold to the Carriage Factories Limited.

A second motor organization known as the Chevrolet Motor Company of Canada, Limited was formed.

The carriage plant was at once re-arranged and adapted to the manufacturing of Chevrolet Motor cars on a large scale. In the course of a few years the Chevrolet had sprung from obscurity until now it ranks among the highest in Canada in number of cars sold.

In 1919 the business was merged into a unit of the world's greatest automotive industry—General Motors Corporation.

A new and greater organization has evolved from the foundations so well laid by Robert McLaughlin and his sons. General Motors of Canada, Limited, a $10,000,000 corporation was taken up the reins of power with the McLaughlin personnel at the head and R. S. McLaughlin. President.

The late Robert McLaughlin took an active part in all public affairs. He was the first president of the Y. M. C. A. in Oshawa. He was a benefactor of Queen's University and Knox College, and a member of the Presbyterian Church.

As an amateur painter in oils and water-colors Mr. McLaughlin showed much ability, and, though it was a pastime, during the later years of his life he devoted much attention to painting and music, of which he was very fond.

He is survived by his widow; two sons, George W. and R. S.; two daughters, 16 grandchildren and two great-grandchildren, one brother and one sister.

COLONIAL MOTORS TO MAKE AUTOMOBILE WITHOUT FRONT AXLE

AN AUTOMOBILE without a front axle is the proposed product of the Colonial Motors Limited, recently organized with a capital of one million dollars under a charter from the Province of Ontario. Head offices have been established in the Exchange Building at Windsor and negotiations are under way for the purchase of the war-time plant of the Canadian Detroit Lubricator Co., in Walkerville. The car, which is being demonstrated in and around the Border Cities' is a medium sized six, and is called "The Canadian." It weighs about 3.000 pounds. Earl G. Gunn, formerly with the Packard Motor Car Co., and designer of the engines of the Cole Aero-Eight and of the Oldsmobile Eight, is the designer of "The Canadian" and chief engineer of the new company. Mr. Gunn has recently designed an engine for a new American car which has not yet been announced. The Colonial Motors will have the exclusive Canadian rights to the engine. The one radical feature of the car is the construction of the front end. Instead of the usual 1-beam front axle, the steering knuckles, or spindles, are attached to the ends of two parallel, transverse, five-leaf springs placed one above the other with six inches between them and the car. The object, of course, is the absorption of shocks in traveling on rough roads. The company which is claimed to have no connection with any United States firm is composed of New York and Pennsylvania men. They declare it their intention to make a real Canadian car, using Canadian labor, and as far as possible Canadian materials.

J. H. DeJONG JOINS HAYNES SELLING STAFF AS CANADIAN DISTRICT SALES MANAGER

J. H. DE JONG, for the past three years associated with the Cole Motor Car Company of Indianapolis, has become affiliated with the selling division of the Haynes Automobile Co., of Kokomo, Indiana, in the capacity of Canadian District Sales Manager. Prior to his association with the Cole Motor Car Company of Indianapolis, a distributor at Omaha for a period of twelve years. He will launch an intensive selling campaign in the Canadian market, and will start at once to bring the features of the new 1922 Haynes 55 and 75 models before the motor buying public of Canada. Mr. De Jong plans to make his permanent headquarters at the King Edward Hotel, Toronto.

WHITNEY POWER FARMING PLAN BOOK

THE Whitney Tractor Company has just issued a 20-page book attractively printed in three colors which gives the details of the Whitney Power Farming Plan.

This book, which is 12 x 18 in size, has for its key note "Whitney dealers can offer the farmer a tractor and tractor implements at a price in keeping with the price he is getting for his products."

No dealer can read this book without getting a clearer picture of the tremendous possibilities of the market for tractors and tractor-drawn tools.

The book shows, by diagrams based on the U.S. Government Census report, that $193,565,000 was spent for tractors in 1920 and that 41 per cent of all the money spent for farm equipment of all kinds the last year went to buy tractors and tractor tools. It shows also that 53 per cent of all the tractors sold that year had a 16-18 rating..

The book shows some of the Whitney sales promotion plans, details of what the sales department is doing towards helping distributors organize the territory and how they co-operate with their dealers to sell tractors. It shows too, the real selling helps that are furnished Whitney dealers. The full page advertisements that reach 5,000,000 readers monthly are shown, together with the plan for tieing this campaign to the dealer's store

A copy of this book will be sent to any dealer who writes for it. Address the Whitney Tractor Company, Cleveland, Ohio.

SENATOR NICHOLLS PASSES

LIEUT.-Col. Senator Frederic Nicholls, J.P., president of the Canadian General Electric Co., and an outstanding figure in Canadian business, died in Toronto recently. Mr. Nicholls was born in England in 1856 and came to Canada in 1874. He was for some years engaged in newspaper work and later entered the electrical business, finally becoming head of the Canadian General Electric.

Reserves—Druggist—How is that cough medicine holding out?

Slimson—I've got enough for a couple more dinner parties.—Life.

GENERAL PRICE REDUCTION BY TIRE MANUFACTURERS

AKRON O., Nov. 15—Automobile tire prices have gone to the lowest level in the history of the tire industry with announcement of drastic price reductions, effective Nov. 15, by most of the major tire companies of Akron.

The long expected break in tire prices came Nov. 12 and followed leads taken by the Firestone Tire & Rubber Co. of Akron and Mason Tire & Rubber Co. of Kent, both ot whom made price revisions Nov. 1. Firestone cut 20 per cent on cord tires, 10 per cent on fabrics and 10 per cent on truck tires. Mason made a blanket cut of 15 per cent.

Goodyear Miller and General simultaneously announced their new price schedules Saturday.

The revised price schedules of the major rubber companies bring tire prices down to a level ranging from 10 to 15 per cent below pre-war figures. The significant feature of the price reductions is that the new lists cut down the margin of difference between fabric and cord tires, making it possible for cord tires to be bought within 25 to 30 per cent as cheaply as fabrics.

The new Goodyear reductions are 30 per cent on the 3 1-2 inch and 4 inch straight side cord tires, 25 per cent on 3 1-2 inch clincher cord tires and 20 per cent on all 4 1-2 and 5 inch straightside cord tires. Cuts on fabric tire prices range from 10 to 20 per cent. the Goodyear Co. has also announced a cut in truck tire prices. The reductions average 15 per cent on all diamond tread solid tires, 10 per cent on pneumatic truck tires, 10 and 15 per cent on pneumatic truck tubes, 6 per cent on smooth solid tires and 10 per cent on cushion truck tires.

The B. F. Gooderich Co. has announced drastic cuts. The reductions are on practically all sizes of fabric and cord automobile tires, solid and pneumatic truck tires and innertubes. On the popular sized cord tires the price cuts average over 22 per cent. the Gooderich schedules make the following reductions:

Sizes	Old Price	New Price
30 x 3 1-2 cords	$24.50	$18.00
32 x 3 1-2	32.90	25.50
31 x 4	40.70	29.40
32 x 4	41.85	32.40

The Michelin Tire Co. has reduced the price of its oversize cord tires up to 4 1-2 in. sizes about 10 per cent and its regular cords of all sizes between 6 and 12 per cent. A reduction has also been made of between 2 and 7 per cent on all fabrics.

CANADIAN OVERLAND NOT AFFECTED

THE Canadian Overland factory, that of Willys-Overland, Limited, of Toronto, is not affected by the passing of the Willys Corporation into receivers' hands. Neither is the Overland factory at Toledo. President T. A. Russell, of the Canadian company. points out that while a decided stimulation of business has been noticed in Canada since September 1st, United States Overland and Willys-Knight business has also increased to a most encouraging degree. The Toledo factory has signed over 400 new dealers in the last two months and shipments in September and October were of a volume greater than at any time in the company's history for a corresponding period.

The Willys Corporation was an entirely different enterprise. While the Overland companies have been long established and have been successfully marketing two well-known four-cylinder cars, the Willys Corporation have never reached the marketing stage. It was organized to produce a six-cylinder car, and progress was being made at its factory in Elizabeth, N. J., with the idea of introducing the new car early next year. It is this concern that has been placed in receiver's hands.

Auto-Autonomy—An American inventor has produced a radio-controlled motor-car that steers itself and sounds its own horn at pedestrians. He is believed to be experimenting with an attachment that will permit it to appear in a police-court and lie like a chauffeur.—Punch.

CANADIAN Motor, Tractor and Implement Trade Journal BUYERS DIRECTORY

This directory will help you with your buying and your planning. The advertisers listed here are thoroughly reliable and leaders in their respective fields. They are looking for live, wide-awake representatives. Study their advertisements carefully because they contain valuable information which will dovetail with your plans. We are glad to go to the trouble of arranging this list—to make it easy for you to select new lines. If it so happens that what you want is not here, write us, and we will tell you where to get it.

AUTO ACCESSORIES
Ace Chain Co., Hamilton.
Brown Engineering Corp'n, Toronto.
Burd High Compression Ring Co., Rockford, Ill.
Cozens & Maynard 4-6 Wood St., Toronto.
Imperial Agencies, 81 Victoria St., Toronto.
Shaw Auto Salvage Parts Supply Co., Toronto.
Cochran Foundry and Machine Works, Tillsonburg, Ont.

AUTOMOBILE LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILE CHAINS
Ace Chain Co., Hamilton.
Keyes Supply Co., Ltd., Ottawa, Ont.

AUTOMOBILES

AUTOMOBILE TIRES
Ames, Holden, McCready, Montreal.

BARN EQUIPMENT

BEAN MACHINERY

BEET MACHINERY
John Deere Mfg. Co., Ltd., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BEARINGS

BINDERS
Birdsell Mfg. Co., South Bend, Ind.
Frost & Wood Co., Ltd., Smith Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

BELTING

BREAK LINING

BATTERIES

CARRIAGES
Cockshutt Plow Co., Ltd., Brantford, Ont.

CREAM SEPARATORS
De Laval Co., Ltd., Peterboro, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

CASTINGS

CORN HARVESTERS
Frost & Wood Co., Ltd., Smith Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CORN MACHINERY
John Deere Mfg. Co., Ltd., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Peter Hamilton Co., Ltd., Peterboro, Ont.

CULTIVATORS
Cockshutt Plow Co., Ltd., Brantford, Ont.
Frost & Wood Co., Ltd., Smith Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

CUTTERS

DAIRY SUPPLIES
De Laval Co., Ltd., Peterboro.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

DIES

DISCS

DITCHING MACHINES

DRILLS, GRAIN
Cockshutt Plow Co., Ltd., Brantford, Ont.
John Deere Mfg. Co., Ltd., Welland, Ont.
International Harvester Co. of Can., Ltd., Hamilton, Ont.

DRILLS, TWIST

DRILLS, GRAIN
International Harvester Co., of Can., Ltd., Hamilton, Ont.

ELECTRICAL EQUIPMENT

ENGINES
John Deere Mfg. Co., Ltd., Welland, Ont.
Cochrane Foundry and Machine Wks. Tillsonburg, Ont.
R.S. Griffith, 371 St. James St. Montreal
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

ENSILAGE CUTTERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

FEEDERS

FARM MACHINERY
Cockshutt Plow Co., Ltd., Brantford, Ont.
Frost & Wood Co., Ltd., Smith Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

FEED CUTTERS
Peter Hamilotn Co., Ltd., Peterboro.

FENCE POSTS

FENCING

GRAIN BLOWERS.

GRINDSTONES
S. Vessot & Co., Joliette, P.Q.

GRINDERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto
S. Vessot & Co., Joliette, P.Q.

HARROWS
Cockshutt Plow Co., Ltd., Brantford, Ont.
Frost & Wood Co., Ltd., Smith Falls, Ont.
John Deere Mfg. Co., Ltd., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HAY LOADERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.
Cockshutt Plow Co., Ltd., Brantford, Ont.
Frost & Wood Co., Ltd., Smith Falls, Ont.

HAY RAKES

HAY CARRIERS

HAY PRESSES
International Harvester Co., of Can., Ltd., Hamilton, Ont.

HULLERS (Clover)

LENS
Keyes Supply Co., Ltd., Ottawa, Ont.

LIGHTING SYSTEMS
R.S. Griffith, 371 St. James St. Montreal
R. A. Lister Co. (Canada), Ltd., Toronto

LIME AND FERTILIZER SOWERS

LUBRICANTS
Canadian Oil Co., Toronto.

MACHINE TOOLS
Windsor Machine and Tool Works, Windsor.

MANURE CARRIERS

MANURE SPREADERS
Cockshutt Plow Co., Ltd., Brantford, Ont.
John Deere Mfg. Co., Ltd., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MARINE FITTINGS

MOWERS
Frost & Wood Co., Ltd., Smith Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

MILKING MACHINES
De Laval Co., Ltd., Peterboro.
R. A. Lister Co. (Canada), Ltd., Toronto

MILLING CUTTERS

OILS
Canadian Oil Co., Toronto.

PISTON RINGS
Brown Engineering Corp'n, Toronto.
Burd High Compression Ring Co., Rockford, Ill.

PLOWS
Cockshutt Plow Co., Ltd., Brantford, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER AND LIGHT EQUIPMENT
R. A. Lister Co. of Canada, Ltd., Toronto.

POWER MACHINERY
International Harvester Co., of Can., Ltd., Hamilton, Ont.

POWER SWITCHBOARDS

POTATO MACHINERY
John Deere Mfg. Co., Ltd., Welland, Ont.

PULVERIZERS
Cockshutt Plow Co., Ltd., Brantford, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

PULPERS

RAKES
Frost & Wood Co., Ltd., Smith Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAPERS
Frost & Wood Co., Ltd., Smith Falls, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

REAMERS

ROLLERS

ROLLER BEARINGS

SCUFFLERS
Cockshutt Plow Co., Ltd., Brantford, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SEEDERS

SCALES

SCREW PLATES

STABLE EQUIPMENT

SILOS

STRAW CUTTERS
Peter Hamilton Co., Ltd., Peterboro, Ont.

SLEIGHS
Cockshutt Plow Co., Ltd., Brantford, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SILO FILLERS
International Harvester Co., of Can., Ltd., Hamilton, Ont.

SOCKET WRENCHES

SEPARATORS (CREAM)
De Laval Co., Ltd., Peterboro.
R. A. Lister Co. (of Canada), Ltd., Toronto, Ont.

SPREADERS, MANURE
Cockshutt Plow Co., Ltd., Brantford, Ont.
John Deere Mfg. Co., Ltd., Welland, Ont.
International Harvester Co., of Can. Ltd., Hamilton, Ont.

SPARK PLUGS

SPRINGS
Cozens & Maynard, Toronto.

STARTERS
Imperial Agencies, 81 Victoria St., Toronto.

STAMPINGS

TELEPHONE APPARATUS

TRACTORS
Advance—Rumley Thresher Co., Inc., Toronto, Winnipeg, Calgary.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

TRACTOR PLOWS
Cockshutt Plow Co., Ltd., Brantford, Ont.
John Deere Mfg. Co., Ltd., Welland, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

TOOLS
Windsor Machine and Tool Works. Windsor.

THRESHERS
Advance—Rumley Thresher Co., Inc., Toronto, Winnipeg, Calgary.
International Harvester Co., of Can., Ltd., Hamilton, Ont.
R. A. Lister Co. (Canada), Ltd., Toronto

THREAD CUTTING TAPS

TIRES
Ames, Holden, McCready, Montreal.

TWIST DRILLS

TRUCKS
International Harvester Co., of Can. Ltd., Hamilton, Ont.

WAGONS
Cockshutt Plow Co., Ltd., Brantford, Ont.
International Harvester Co., of Can., Ltd., Hamilton, Ont.

WATER BOWLS

WIRES AND CABLES

J. & J. Taylor's Safes

One J. & J. Taylor Safe, inside dimensions 15 inches deep, 2 feet 6 inches wide, three feet, 11 1-2 inches high and fitted with a built in compartment. Price $250.00.

One J. & J. Taylor Safe, 18 inches deep, two feet 9 inches wide, four feet 5 inches high, fitted with a steel compartment. Both safes are in good condition and can be bought at a price that will save considerable money to the purchaser. Price $200.00.

Box 26, The Farmers' Magazine
143 University Ave., Toronto

With the Manufacturers

The Rock Island Plow Co., Rock Island, Ill., recently announced the appointment of J. L. Irving as general manager. Mr Irving has spent all his life in the implement industry. He started when seventeen years of age with the Plano Mfg. Co., which afterwards merged with other concerns forming the International Harvester Co. Mr. Irving also was associated with the Moline Plow Co., Moline, Ill., for twenty-two years.

Arthur Sedwick, who has for some time been connected with the advertising department of the Avery Co., Peoria, Ill., has resigned.

The Tool and Stampings Ltd., 87 Jarvis Street, Toronto, is a new concern established for the purpose of manufacturing tools, dies, and metal stampings.

The Imperial Oil Company's offices at St. Catharines were broken into and the safe blown open recently. The thieves took about $300.

North Bros. Mfg. Co., Philadelphia, manufacturers of automotive equipment, etc., recently announced the death of James Kinsman, one of their best known salesmen. Mr. Kinsman was associated with North Bros. for about 40 years.

The Veteran Employees' Association of the Canadian Westinghouse Company of Hamilton, gathered in the Arcade Rose Room on the occasion of its third annual banquet. About one hundred members were present.

At the annual meeting of the N.B. Petroleum Co., held at Moncton, N.B. F. R. Sumner, president of the Sumner Co., Ltd., was re-elected president.

Birmingham Motors of Jamestown, N.Y., will establish a Canadian plant in Peterboro, Ont. The plant formerly occupied by Henry Hope and Son, will be the probable location.

It has just been announced that a syndicate of capitalists of Toronto, Montreal and Hamilton has formed a company under the Dominion laws and a charter has been granted to the International Wheel and Rim Company, Limited, for the purpose of manufacturing a double-disc steel automobile wheel under the Culp and Crenan patents and the new Culp demountable rim. The company has decided to locate its factory in Toronto.

Luther Smith, managing director of the Greenfield Taps and Dies Company, of Galt, Ont., was in Vancouver recently calling on the trade.

The Prest-O-Lock Company of Canada, Ltd., has been incorporated with head offices in St. Catharines, Ont., to manufacture automobile locks. The authorized capital is $50,000.

The Continental Electric Company Limited, has been incorporated with headquarters at 505-511 King street, East, Toronto, to manufacture Royal Electric Products in Canada. Electric washing machines will be one of the principal products.

Ruggles Motor Truck Co., London., Ont., is again operating on full time. It is expected that the factory will continue on the present schedule.

The Windsor Machine and Tool Co., a $500,000 concern, has launched into the manufacture of automobile pistons. The trade name of the product will be "Wilkie" after Lorne A. Wilkie, president of the company, but the pistons, made of gray iron, will be of the same model as a well known American type. Sizes to fit every model of car now on sale in Canada will be supplied and Mr. Wilkie calculates that 500,000 pistons are sold in Canada every year, and that 90 per cent of this number are imported from the United States.

Metal Products, Ltd., Ottawa, Ont., is a new incorporation with a capitalization of $300,000.

Master Tires, Ltd., is a new concern incorporated in Ontario with a capital of $1,000,000 to manufacture tires and rubber goods. Toronto will be the headquarters.

Colonial Motors, Ltd., capitalized at $1,000,000 is negotiating for the purchase of the factory of the Canadian Detroit Lubricator Co., at Walkerville, and plans to start manufacturing a new five-passenger auto as soon as possible. Colonel Lee A. McCalla, of Detroit, is the vice-president and general manager.

The Canadian Lever Springs, Ltd, is a new concern incorporated in Ontario to manufacture springs for automobiles and trucks. The company which holds patent rights for Canada on a lever spring now manufactured in the United States will establish a factory in Peterboro, Ont.

A Dominion charter has been granted the International Wheel & Rim Co., Ltd. The company has been formed by a syndicate of Toronto, Montreal and Hamilton capitalists, and it will manufacture a double-disc steel automobile wheel. It is announced that a site will be chosen in Toronto. Temporary manufacturing quarters have been secured. Joseph M. Crenan is president and general manager.

A new company to be known as the United Chain and Manufacturing Co., with offices at 114 Queenston St., St. Catharine Ont., has been formed by J. Birchall, formerly superintendent of McKinnon Columbus Chain Co., and McKinnon Industries, Ltd. The new company will manufacture automotive accessories, chains, tires, etc.

The Ontario Wind Engine and Pump Co., Toronto, have completed arrangements with the Empire Cream Separator Co., Bloomfield. N. J. whereby they will distribute Empire cream separators throughout all the Canadian provinces with the exception of British Columbia.

The Dominion Thresher and Implement Co., New Hamburg, Ont. has been incorporated with a capital of $300,000.

The International Harvester Co., Hamilton, Ont., has resumed operations in the malleable iron foundry. Thirty-five men have been taken on.

The Packard Motor Co., announced recently the appointment of R. A. Mitchell, vice-president and secretary.

The appointment of F. A. Morrison as assistant secretary of the Maxwell and Chalmers organization, Windsor, is announced by W. Leggard Chamberlain as general sales manager. Since December, 1920,Mr. Chamberlain has been assistant general sales manager and has been connected with the company since 1916.

The Winnipeg Motor Car, Ltd., of Winnipeg, Manitoba, have acquired three acres of land in this city for a three story building and expect to turn out 55 cars per day. The company have been working all summer getting it into shape and they expect to be producing by the first of the new year.

Edward D. Wilmer, president of the Goodyear Tire and Rubber Co., states that notwithstanding the fact that sales during the first six months of 1920 have exceeded those of any period in the company's history, more tires have been sold during the ten months up to October 1st, 1921, than in the same period a year ago. In September the company sold 69,000 more tires than in September, 1920.

The Turner Mfg. Co., of Port Washington, Wis., recently published a new catalogue describing their complete line of gas engines. Price reductions are also announced.

J. J. Wilson, pioneer foundryman in automobile work has severed his connection with the General Motors Corp. and has taken charge of the foundry division of Hiram Walker & Sons, Metal Products, Ltd., Walkerville, Ont. This company makes a general line of automobile castings.

Colonial Motors, Ltd., a new million-dollar company operating under Provincial Charter, will establish a factory in Walkerville, Ont. The company plans to commence operations as soon as possible and may purchase the factory of the Canadian-Detroit Lubrication Co.

For the purpose of manufacturing the "Liberty" washing machine, the Lundy Products, Ltd., has been organized with a factory at Dunnville, Ont.

A new company, Spring and Auto Parts, Ltd., has been incorporated to manufacture springs, motors, engines, carburetors, automobile accessories, etc., with $50,000 capital stock in Toronto.

The Kerr & Goodwin Machinery Co., Brantford; Ontario, are building up an export trade in Oil Engines. Repeat orders for them have been received from France and shipments have recently been made to the British West Indies and South America. The engines are also in use throughout the Dominion. The engine is a semi-Deisel and is purely an oil burning engine, developing a dependable power, at a great saving in fuel.

NEWS — OF THE TRADE FOR THE TRADE

ALBERTA

CALGARY:—The Scarlett Service Station has moved into new quarters at 407 3rd St. W. The entire floor space of the new building is devoted to carrying stock and battery repairing.

CALGARY:—L. A. Spaulding, battery and automobile electrical dealer, has purchased the business formerly conducted by the A and M Service Station, including the agency for the Prest O-Lite Battery.

LETHBRIDGE:—The Baalim Motor Co. Chevrolet dealers of this city have started a new scheme to enable their prospects to buy cars. It is called a Springtime Club, the idea is that the prospect pays down $195 in cash now, leaves it in this club until May 1, 1922, drawing 7 per cent interest. On May 1 the prospect gets delivery of a car and the balance is payable at $10 a month.

EDMONTON:—The Auto Radiator Service have been appointed distributors for central and northern Alberta for the Maybilt frost proof radiators.

BRITISH COLUMBIA

KAMLOOPS:—The local branch of the Retail Merchants Association has elected C. Marsh, automobile dealer, as president.

PENTICTON:—J. Venus, automobile and farm machinery dealer, has disposed of his business.

VICTORIA:—H. B. Olsen and H. C. Olsen have taken over the Empress Garage formerly conducted by A. Newlin.

SOUTH PORT MANN:—The auto accessory business formerly conducted by McDonald and Thompson, has been purchased by S. O. Smith.

MANITOBA

WINNIPEG:—The Columbus Rubber Co. of Montreal, announce that their Winnipeg Branch will be moved from its present location to larger premises in the Stobart Bldg, corner of King Street and McDermott Avenue, shortly after the new year.

ONTARIO

LONDON:—Ruggles Motor Truck Co. is again operating on full time.

BRANTFORD:—The Monarch Tractors are planning to reorganize.

WINDSOR:—The Windsor Automobile Show will be held February 27 to March 4, 1922 at the Armories, under the auspices of the Border Cities Automotive Dealers Association. The officers of the association were elected for another year at a meeting recently. F. L. Copeland is president, Fred Duek, secretary; A. E. Thompson, treasurer.

CHATHAM:—A building owned by the Brisco Wholesale Accessories Ltd., of Chatham, and used by them as a storehouse was recently destroyed by fire.

BRANTFORD:—C. J. Mitchell has secured the agency for Chevrolet cars.

GUELPH:—The Laing Mfg. Co. will build a garage, 90x50 feet, adjoining their machine shop.

BRANTFORD:—F. A. Nancekivell & Co.is a new automobile business opened here. They have the agency for Ford cars, trucks and tractors.

ORANGEVILLE:—J. E. Young, of J. E. Young and Co., automobile and implement dealers, has sold out his interests in the business to his partner J. E. Smith. Mr. Smith will carry on the business in future. He has the Ford and Massey-Harris agencies.

TORONTO:—The Splitdorf Electrical Co. is moving from its present location at 469 Yonge Street, to more commodius and up-to-date quarters at 490 Yonge Street.

CHATHAM:—Robert Gray, president of the Gray-Dort Motor Co. accompanied by J. A. Byers secretary of the company, returned from a trip recently through the Western Provinces.

HAMILTON:—An interesting address was given on Nov. 18 at the Chamber of Commerce on the "Care of Autos During Winter" by Major C. E. Hastings automobile expert, and civil engineer of Toronto. The meeting was held under the auspices of the Hamilton Automobile Club.

HAMILTON:—Walsh and Findlay Automobile dealers have sold out.

MITCHELL:—Charles Dungey has sold out his garage business to Percy Harlow. Mr. Harlow has also taken over the Gray-Dort agency.

INGERSOLL;—F. W. Staples, Ford dealer of this city, increased his sales this year over that of last year by 33 1-3. Mr. Staples told M.T.I. that service and hard work did it.

TORONTO:—The Auto Service Syndicate have received a permit to alter a factory into a garage and instal gasoline equipment at the Southwest corner of Dundas and Victoria streets at a cost of $40,000.

THOROLD:—Thorold Motors Ltd., is a new industry to be established here to manufacture motor trucks. The company is composed largely of local men.

SASKATCHEWAN

KISBEY:—Moe Bros Garage and Repair Works, dealers in automobiles, repairs, accessories and farm machinery, have done a big individual threshing machine and power farming business during 1921.

WAPELLA:—Dalzell and Hillcox have purchased the automobile business formerly conducted by Kidd and Clements.

REGINA:—The manager of the Canadian Oliver Chilled Plow Co., R. F. Harrington, made a trip recently to the head office of his company at South Bend, Ind.

REGINA:—Peter Amot, manager of the local branch of the Advance Rumely Thresher Co., died recently as a result of a motor accident.

AMES HOLDEN

"Grey Sox" and "Red Sox" Tubes

add to the mileage given by "Auto-Shoes"

AHM System

23,000 Miles

Without a Blowout

The best advertising for Ames Holden AUTO-SHOES is the remarkable mileage they are giving — enthusiastic users are the best salesmen.

Here is a typical example of AUTO-SHOE performance:

Mr. H. Parker, Carroll Street, Ingersoll, Ontario, who operates a taxi service, has recently discarded two AUTO-SHOES which travelled 23,000 miles before they were worn enough to be replaced. While using these AUTO-SHOES, **seven** other well-known makes of tires were worn out on the same car.

Needless to say, Mr. Parker is convinced that AUTO-SHOES "cost less per mile" and he will never use any other tires in future.

Every AUTO-SHOE is sold with an unconditional guarantee of "a satisfied customer" —based on previous tire experience.

If You Sell Tires

ask our nearest Sales Office to tell you about the unusual Ames Holden dealer policy and the opportunity there is in your district to do a bigger tire business with

AMES HOLDEN "AUTO-SHOES"

CORD AND FABRIC TIRES MADE IN ALL STANDARD SIZES

Manufactured By

AMES HOLDEN McCREADY LIMITED

HALIFAX, ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, LONDON, WINNIPEG, REGINA, SASKATOON, EDMONTON, CALGARY, VANCOUVER

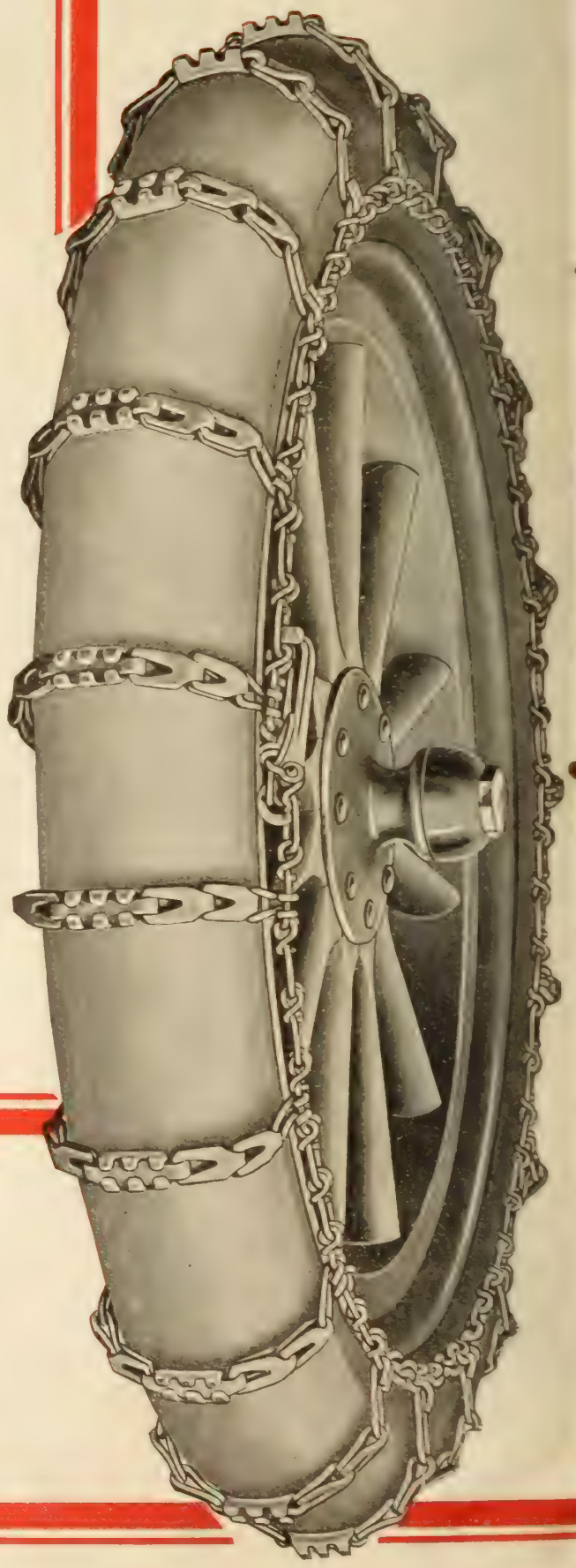
The Genuine Perfected Ace

"Made in Canada"

The New Guaranteed Non-Skid Chain

HERE is a tire chain that is considerably more than a mere collection of links. As the illustration plainly shows the tread chains set flat, smooth and snug against the tire—they will not tear or cut the tire. The special gripping link is almost flat and of positive non-skid design—it guarantees traction on any surface. The whole chain is built extra heavy and will prove especially effective on poor roads.

The "Ace" is made in Canada and designed especially to meet Canadian road conditions. It should prove an out-of-the-ordinary proposition to automotive equipment dealers and garage men.



Ace Chain, Limited

Manufacturers of Automobile Equipment

Hamilton Canada